#### **Analytical Data Package Prepared For**

## **Pacific Northwest National Lab**

Radiochemical Analysis By

### **STL Richland STLRL**

2800 G.W. Way, Richland Wa, 99354, (509)-375-3131.

Data Package Contains 44 Pages

Report Nbr: 28816

SDG Nbr	ORDER Nbr	CLIENT ID NUMBER	LOT Nbr	WORK ORDER	RPT DB ID	BATCH
W04628	U05-006	B1CLL4	J5D270327-1	G9A7L1AA	9G9A7L10	5118294
		B1CLL4	J5D270327-1	G9A7L1AC	9G9A7L10	5118295
		B1CLN4	J5D270327-2	G9A7N1AA	9G9A7N10	5118294
		B1CLN4	J5D270327-2	G9A7N1AC	9G9A7N10	5118295
		B1CLN0	J5D270340-1	G9A9E1AA	9G9A9E10	5118294
		B1CLN0	J5D270340-1	G9A9E1AC	9G9A9E10	5118295
		B1CLN2	J5D270340-2	G9A9H1AA	9G9A9H10	5118294
		B1CLN2	J5D270340-2	G9A9H1AC	9G9A9H10	5118295
		B1CLM8	J5D270340-3	G9A9L1AA	9G9A9L10	5118294
		B1CLM8	J5D270340-3	G9A9L1AC	9G9A9L10	5118295
		B1CLL6	J5D270340-4	G9A9R1AA	9G9A9R10	5118294
		B1CLL6	J5D270340-4	G9A9R1AC	9G9A9R10	5118295
		B1CLM6	J5D270340-5	G9A9W1AA	9G9A9W10	5118294
		B1CLM6	J5D270340-5	G9A9W1AC	9G9A9W10	5118295
	*	B1CLM0	J5D270340-6	G9A901AA	9G9A9010	5118294

**Comments:** 

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Report Nbr: 28816

SDG Nbr	ORDER Nbr	CLIENT ID NUMBER	LOT Nbr	WORK ORDER	RPT DB ID	BATCH	
W04628	U05-006	B1CLM0	J5D270340-6	G9A901AC	9G9A9010	5118295	
		B1CLM4	J5D270340-7	G9A921AA	9G9A9210	5118294	
		B1CLM4	J5D270340-7	G9A921AC	9G9A9210	5118295	
		B1CLL8	J5D270340-8	G9A951AA	9G9A9510	5118294	
		B1CLL8	J5D270340-8	G9A951AC	9G9A9510	5118295	
		B1CLM1	J5D270340-9	G9A991AA	9G9A9910	5118294	
		B1CLM1	J5D270340-9	G9A991AC	9G9A9910	5118295	



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#### Certificate of Analysis

Pacific Northwest National Laboratories Sigma V Building Richland, WA 99352

May 13, 2005

Attention: Dot Stewart

SAF Number : U05-006

Date SDG Closed : April 27, 2005 Number of Samples : Eleven (11) Sample Type : Water

SDG Number : W04628

Data Deliverable : 15-Day / Priority

#### **CASE NARRATIVE**

#### I. Introduction

On April 27, 2005, eleven water samples were received at STL Richland (STLR) for radiochemical analysis. Upon receipt, the samples were assigned the following laboratory ID numbers to correspond with the Pacific Northwest National Laboratories (PGW) specific IDs:

PGW ID#	STLR ID#	<b>MATRIX</b>	DATE OF RECEIPT
B1CLL4	G9A7L	WATER	4/27/05
B1CLN4	G9A7N	WATER	4/27/05
B1CLM8	G9A9L	WATER	4/27/05
B1CLN2	G9A9H	WATER	4/27/05
B1CLN0	G9A9E	WATER	4/27/05
B1CLM1	G9A99	WATER	4/27/05
B1CLL8	G9A95	WATER	4/27/05
B1CLM4	G9A92	WATER	4/27/05
B1CLM0	G9A90	WATER	4/27/05
B1CLM6	G9A9W	WATER	4/27/05
B1CLL6	G9A9R	WATER	4/27/05

#### II. Sample Receipt

The samples were received in good condition and no anomalies were noted during check-in.

#### III. Analytical Results/Methodology

The analytical results for this report are presented by laboratory sample ID. Each set of data includes sample identification information, analytical results and the appropriate associated statistical errors.

The requested analyses were:

**Liquid Scintillation Counting** 

Technetium-99 by method RICH-RC-5065

**Laser Induced Phosphorimetry** 

Total Uranium by method RICH-RC-5058

#### IV. Quality Control

The analytical results for each analysis performed under SDG W04628 includes a minimum of one laboratory control sample (LCS), one method (reagent) blank, and one duplicate sample analysis. Any exceptions have been noted in the "Comments" section.

QC and sample results are reported in the same units.

#### V. Comments

#### **Liquid Scintillation Counting**

Technetium-99 by method RICH-RC-5065:

The LCS, batch blank, samples and sample duplicate (B1CLN0), and sample matrix spike (B1CLN0) results are within contractual requirements.

#### **Laser Induced Phosphorimetry**

Total Uranium by method RICH-RC-5058:

The LCS, batch blank, samples, sample duplicate (B1CLL4), and sample matrix spike (B1CLL4) results are within contractual requirements.

I certify that this Certificate of Analysis is in compliance with the SOW, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hard copy data package has been authorized by the Laboratory Manager, or a designee as verified by the following signature.

Reviewed and approved:

· Becky Warrington
Rroject Manager

#### **Drinking Water Method Cross References**

	DRINKING WATER	R ASTM METHOD CROSS REFERENCES
Referenced Method	Isotope(s)	STL Richland's SOP number
EPA 901.1	Cs-134, I-131	RICH-RC-5017
EPA 900.0	Alpha & Beta	RICH-RC-5014
EPA 903.1	Ra-226	RICH-RC-5005
EPA 904.0	Ra-228	RICH-RC-5005
EPA 905.0	Sr89/90	RICH-RC-5006
ASTM D2460	Total Radium	RICH-RC-5027
Standard Method 7500-U-C & ASTM D5174	Uranium	RICH-RC-5058
EPA 906.0	Tritium	RICH-RC-5007
NOTE:		
The Gross Alpha LCS is prepared with Am-24		
The Gross Beta LCS is prepared with Sr/Y-90	(unless otherwise s	specified in the case narrative)

#### **Uncertainty Estimation**

STL Richland has adopted the internationally accepted approach to estimating uncertainties described in "NIST Technical Note 1297, 1994 Edition". The approach, "Law of Propagation of Errors", involves the identification of all variables in an analytical method which are used to derive a result. These variables are related to the analytical result (R) by some functional relationship, R = constants \* f(x,y,z,...). The components (x,y,z) are evaluated to determine their contribution to the overall method uncertainty. The individual component uncertainties  $(u_i)$  are then combined using a statistical model that provides the most probable overall uncertainty value. All component uncertainties are categorized as type A, evaluated by statistical methods, or type B, evaluated by other means. Uncertainties not included in the components, such as sample homogeneity, are combined with the component uncertainty as the square root of the sum-of-the-squares of the individual uncertainties. The uncertainty associated with the derived result is the combined uncertainty  $(u_c)$  multiplied by the coverage factor (1,2, or 3).

When three or more sample replicates are used to derive the analytical result, the type A uncertainty is the standard deviation of the mean value (S/vn), where S is the standard deviation of the derived results. The type B uncertainties are all other random or non-random components that are not included in the standard deviation.

The derivation of the general "Law of Propagation of Errors" equations and specific example are available on request.

	Report Definitions
Action Lev	An agreed upon activity level used to trigger some action when the final result is greater than or equal to the Action Level. Often the Action Level is related to the Decision Limit.
Batch	The QC preparation batch number that relates laboratory samples to QC samples that were prepared and analyzed together.
Bias	Defined by the equation (Result/Expected)-1 as defined by ANSI N13.30.
COC No	Chain of Custody Number assigned by the Client or STL Richland.
Count Error (#s)	Poisson counting statistics of the gross sample count and background. The uncertainty is absolute and in the same units as the result. For Liquid Scintillation Counting (LSC) the batch blank count is the background.
Total Uncert (#s)  u <sub>c</sub> - Combined  Uncertainty.	All known uncertainties associated with the preparation and analysis of the sample are propagated to give a measure of the uncertainty associated with the result, $u_c$ the combined uncertainty. The uncertainty is absolute and in the same units as the result.
(#s), Coverage Factor	The coverage factor defines the width of the confidence interval, 1, 2 or 3 standard deviations.
CRDL (RL)	Contractual Required Detection Limit as defined in the Client's Statement Of Work or STL Richland "default" nominal detection limit. Often referred to the reporting level (RL)
Lc	Decision Level based on instrument background or blank, adjusted by the Efficiency, Chemical Yield, and Volume associated with the sample. The Type I error probability is approximately 5%. Lc=(1.645 * Sqrt(2*(BkgrndCnt/BkgrndCntMin)/SCntMin)) * (ConvFct/(Eff*Yld*Abn*Vol) * IngrFct). For LSC methods the batch blank is used as a measure of the background variability. Lc cannot be calculated when the background count is zero.
Lot-Sample No	The number assigned by the LIMS software to track samples received on the same day for a given client. The sample number is a sequential number assigned to each sample in the Lot.
MDC MDA	Detection Level based on instrument background or blank, adjusted by the Efficiency, Chemical Yield, and Volume with a Type I and II error probability of approximately 5%. MDC = (4.65 * Sqrt((BkgrndCnt/BkgrndCntMin)/SCntMin) + 2.71/SCntMin) * (ConvFct/(Eff * Yld * Abn * Vol) * IngrFct). For LSC methods the batch blank is used as a measure of the background variability.
Primary Detector	The instrument identifier associated with the analysis of the sample aliquot.
Ratio U-234/U-238	The U-234 result divided by the U-238 result. The U-234/U-238 ratio for natural uranium in NIST SRM 4321C is 1.038.
Rst/MDC	Ratio of the Result to the MDC. A value greater than 1 may indicate activity above background at a high level of confidence. Caution should be used when applying this factor and it should be used in concert with the qualifiers associated with the result.
Rst/TotUcert	Ratio of the Result to the Total Uncertainty. If the uncertainty has a coverage factor of 2 a value greater than 1 may indicate activity above background at approximately the 95% level of confidence assuming a two-sided confidence interval. Caution should be used when applying this factor and it should be used in concert with the qualifiers associated with the result.
Report DB No	Sample Identifier used by the report system. The number is based upon the first five digits of the <b>Work Order</b> Number.
RER	The equation Replicate Error Ratio = $(S-D)/[sqrt(TPUs^2 + TPUd^2)]$ as defined by ICPT BOA where S is the original sample result, D is the result of the duplicate, TPUs is the total uncertainty of the original sample and TPUd is the total uncertainty of the duplicate sample.
SDG	Sample Delivery Group Number assigned by the Client or assigned by STL Richland upon sample receipt.
Sum Rpt Alpha Spec Rst(s)	The sum of the reported alpha spec results for tests derived from the same sample excluding duplicate result where the results are in the same units.
Work Order	The LIMS software assign test specific identifier.
Yield	The recovery of the tracer added to the sample such as Pu-242 used to trace a Pu-239/40 method.
i	

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5/13/2005 11:00:26 AM STL Richland Report Lab Code: STLRL

FormNb	r: R	FormatType:	FEAD <b>Vers</b>	ion: 05	Rpt N	<b>br</b> : 28816		File Name:	h:\Reportdb\	edd\FeadIV\Rad\W046	628.Edd, h:\Re	portdb\e	dd\FeadIV\Rad\28816.	Edd
Lab Sample Id: 9G9A7L10		Test User	Contract Nbr MW6-SBB-A1	<b>SAF Nb</b>	or Sdg Nbr: W04628	QC Type		Moisture/ Solids%*:	Distilled Volume	· · · · · · · · · · · · · · · · ·			llection Date: 2005 11:20	
<b>Batch</b> 5118294	<b>Analyte</b> TC-99	<b>CAS#</b> 14133-76-7	<b>Result</b> 1.14E+03		CntU 2S 1.9E+01	TotU 2S 7.3E+01	Qua	MDA 1.04E+0	TrcYield 1 100.0	Method TC99_ETVDSK_LS	<b>Alq Size</b> 1.286E-01	Unit L	Analy Date/Time 05/11/200 12:06	Act
5118295	Uranium	7440-61-1	4.00E+01	ug/L	4.7E+00	4.7E+00		8.38E-02	2	UTOT_KPA	2.50E-02	ML	05/09/200 09:22	! [
Lab Sample Id: 9G9A7N10		Test User	Contract Nbr MW6-SBB-A1	SAF Nb	or Sdg Nbr: W04628	QC Type		Moisture/ Solids%*:	Distilled Volume				llection Date: 2005 09:54	MANAGE COLUMN
		CAS#					0	I MEDA	TVC-1d	Mindle out	A1 - O!			
<b>Batch</b> 5118294	Analyte TC-99	14133-76-7	Result 1.32E+02		CntU 2S 7.6E+00	TotU 2S	Qua	I MDA 1.06E+0	TrcYield	Method TC99_ETVDSK_LS	Alq Size	Unit L	Analy Date/Time 05/11/200 13:08	Act
5118295	Uranium	7440-61-1	1.39E+00	ug/L	1.4E-01			8.38E-02		UTOT KPA	2.50E-02	ML		
Lab Sample Id: 9G9A9010	Client Id: B1CLM0	Test User	Contract Nbr MW6-SBB-A1	SAF Nb	or Sdg Nbr: W04628	QC Type		Moisture/ Solids%*:	Distilled Volume	Sample	11.8		llection Date: 2005 10:19	***************************************
Batch	Analyte	CAS#	Result	Unit	CntU 2S	TotU 2S	Qua	I MDA	TrcYield	Method	Alq Size	Unit	Analy Date/Time	Act
5118294	TC-99	14133-76-7	4.52E+02	pCi/L	1.2E+01	3.2E+01		1.05E+0	1 100.0	TC99_ETVDSK_LS	1.29E-01	L	05/11/200 21:27	·
5118295	Uranium	7440-61-1	7.90E+01	ug/L	9.4E+00	9.4E+00		8.38E-02	2	UTOT_KPA	2.50E-02	ML	05/09/200 10:57	1
Lab Sample Id: 9G9A9210	Client ld: B1CLM4	Test User	Contract Nbr MW6-SBB-A1	<b>SAF Nb</b> U05-006	or Sdg Nbr: W04628	QC Type		Moisture/ Solids%*:	Distilled Volume	•	A TOMOROUS - Marie A M		llection Date: 2005 10:45	
Batch	Analyte	CAS#	Result	Unit	CntU 2S	TotU 2S	Qua	I MDA	TrcYield	Method	Alq Size	Unit	Analy Date/Time	Act
5118294	TC-99	14133-76-7	2.08E+02	pCi/L	9.0E+00	1.8E+01		1.06E+0 <sup>-</sup>	1 100.0	TC99_ETVDSK_LS		L	05/11/200 22:29	
5118295	Uranium	7440-61-1	9.35E+01	ug/L	1.1E+01	1.1E+01		8.38E-02		UTOT_KPA	2.50E-02	ML	05/09/200 11:02	. 1
Lab Sample Id: 9G9A9510	Client Id: B1CLL8	Test User	Contract Nbr MW6-SBB-A1	<b>SAF Nb</b>	r <b>Sdg</b> <b>Nbr</b> : W04628	QC Type		Moisture/ Solids%*:	Distilled Volume	Sample On Date:		l	llection Date: 2005 12:11	
Batch	Analyte	CAS#	Result		CntU 2S	TotU 2S	Quai	I MDA	TrcYield	Method	Alq Size	Unit	Analy Date/Time	Act
5118294	TC-99	14133-76-7	3.20E+02		1.1E+01	2.5E+01		1.03E+0		TC99_ETVDSK_LS	•	L	05/12/200 00:34	
5118295	Uranium	7440-61-1	1.85E+02	ug/L	2.2E+01	2.2E+01		8.38E-02		UTOT_KPA	2.50E-02	ML		
Lab Sample Id:	Client Id:	Test User	Contract Nbr	SAF Nb	r Sdg Nbr:	QC Type		Moisture/ Solids%*:	Distilled Volume	Sample On Date:			llection Date:	
9G9A9910	B1CLM1		MW6-SBB-A1	U05-006	W04628							04/27/2	2005 10:19	
Batch	Analyte	CAS#	Result			TotU 2S	Qual		TrcYield	Method	Alq Size	Unit	Analy Date/Time	Act
5118294	TC-99	14133-76-7	4.89E+02	pCi/L	1.3E+01	3.5E+U1		1.05E+01	1 100.0	TC99_ETVDSK_LS	1.284E-01	L	05/12/200 01:36	1

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U Qual - Analyzed for, but the result is less than the Mdc or gamma scan did not identify the nuclide.

J Qual - No U qualifier has been assigned and the result is below the Reporting Limit (CRDL).

B Qual- Analyte was found in the associated laboratory blank above the MDC.

Lab   Client Sample Id: Id:   User   Nbr   Nb	5/13/200	5 11:00:26	AM			S'.	TL Ric	hland	Repo	rt				Lab Code: STLRI	-	
Lab   Client Sample Id: Id:   User   Nbr   Nb	FormNb	r: R	FormatType: F	EAD <b>Versi</b>	on: 05	Rpt N	<b>br</b> : 28816		File Name:	h:\Reportdb\	\edd\FeadIV\Rad\W04	4628.Edd, h:\Re	eportdb\ed	dd\FeadIV\Rad\28	816.Edd	d
Sample Id:   Id:   User	5118295	Uranium	7440-61-1	7.76E+01	ug/L	9.2E+00	9.2E+00		8.38E-02	2	UTOT_KPA	2.50E-02	ML	05/09/200 1	1:23	-
	Sample Id:	ld:	User	Nbr		Nbr:	Тур				•			Date:		
Collection   Col	5118294	_	14133-76-7	2.73E+02	pCi/L	1.0E+01	2.2E+01	Qual	1.06E+0	1 100.0	TC99_ETVDSK_L	S 1.274E-01		05/11/200 14	1:11	Act 
Sample   Ci   Id	5118295	Uranium	7440-61-1	1.97E+02	ug/L	2.3E+01	2.3E+01		8.38E-02	2	UTOT_KPA	2.50E-02	ML	05/09/200 10	):01	i
Sample   Collection   Sample   Collection   Sample   Collection   Date:   Collection   Date	Sample Id:	ld:	User	Nbr		Nbr:	Тур				•			Date:		
Sample   S		•						Qual					Unit	Analy Date/Time	) A	Act
Lab Client Juser Nor Nor Nor Nor Nor Nor Nor Nor Nor No	5118294	TC-99	14133-76-7	5.05E+00	pCi/L	4.5E+00	6.2E+00	U	1.06E+0	1 100.0	TC99_ETVDSK_L	S 1.264E-01	L	05/11/200 17	':18	1
Sample   di	5118295	Uranium	7440-61-1	1.33E+00	ug/L	1.4E-01	1.4E-01		8.38E-02	2	UTOT_KPA	2.50E-02	ML	05/09/200 10	):04	I
Batch         Analyte         CAS#         Result         Unit         CntU 2S         TotU 2S         Qual         MDA         TrcYield         Method         Alq Size         Unit         Analy Date/Time         According to the pate of t	Sample Id:	ld:	User	Nbr		Nbr:	Тур				•		1	Date:		
TC-99							TotU 2S	Qual	MDA	TrcYield	Method	Alq Size			• A	ct
Lab   Client   Sample   Id:   User   Nbr   Nbr:   Type:   Solids%*:   Volume   On Date:   On Date	5118294	TC-99	14133-76-7	1.29E+02	pCi/L	7.6E+00	1.4E+01		1.07E+0	1 100.0	TC99_ETVDSK_L	=	L	05/11/200 18	3:20	I
Sample Id:         Id:         User         Nbr         Nbr:         Type:         Solids%*:         Volume         On Date:         Date:           9G9A9R10         B1CLL6         MW6-SBB-A1         U05-006         W04628         W04628         04/27/2005 09:34           Batch         Analyte         CAS#         Result         Unit         CntU 2S         TotU 2S         Qual         MDA         TrcYield         Method         Alq Size         Unit         Analyte Analy Date/Time         Ac           5118294         TC-99         14133-76-7         6.07E+03         pCi/L         4.3E+01         3.6E+02         1.07E+01         100.0         TC99_ETVDSK_LS         1.26E-01         L         05/11/200         19:22           5118295         Uranium         7440-61-1         3.01E+02         ug/L         3.6E+01         3.6E+01         8.38E-02         UTOT_KPA         2.50E-02         ML         05/09/200         10:23           Lab         Client Sample Id:         Id:         User         Nbr         Nbr         Nbr:         Type:         Solids%*:         Volume         On Date:         04/27/2005 09:59           Batch         Analyte         CAS#         Result         Unit         CntU 2S         TotU 2S	5118295	Uranium	7440-61-1	1.21E+02	ug/L	1.4E+01	1.4E+01		8.38E-02	2	UTOT_KPA	2.50E-02	ML	05/09/200 10	):14	1
5118294         TC-99         14133-76-7         6.07E+03         pCi/L         4.3E+01         3.6E+02         1.07E+01         100.0         TC99_ETVDSK_LS         1.26E-01         L         05/11/200         19:22           5118295         Uranium         7440-61-1         3.01E+02         ug/L         3.6E+01         3.6E+01         8.38E-02         UTOT_KPA         2.50E-02         ML         05/09/200         10:23           Lab         Client Sample Id:         Test         Contract Nbr         SAF Nbr         Sdg Nbr:         QC         Moisture/ Distilled Sample         Sample On Date:         Collection Date:           9G9A9W10         B1CLM6         MW6-SBB-A1         U05-006         W04628         W04628         Volume         On Date:         04/27/2005 09:59           Batch         Analyte         CAS#         Result         Unit         CntU 2S         TotU 2S         Qual         MDA         TrcYield         Method         Alq Size         Unit         Analy Date/Time         Ac           5118294         TC-99         14133-76-7         1.45E+03         pCi/L         2.1E+01         9.1E+01         1.05E+01         100.0         TC99_ETVDSK_LS         1.273E-01         L         05/11/200         20:25	Sample Id:	ld:	User	Nbr		Nbr:	Тур				•		1	Date:		
Lab         Client Sample Id:         Test User         Contract Nbr         SAF Nbr Nbr:         Sdg Nbr:         QC Moisture/ Solids%*:         Distilled Volume         Sample On Date:         Collection Date:           9G9A9W10         B1CLM6         MW6-SBB-A1         U05-006         W04628         W04628         W04000         Method         Alq Size         Unit         Analyte	Batch	Analyte	CAS#	Result	Unit	CntU 2S	TotU 2S	Qual	MDA	TrcYield	Method	Alq Size	Unit	Analy Date/Time	<b>.</b> A	ct
Lab Client Sample Id: User Nbr Sdg QC Moisture/ Distilled Sample Collection Date: 9G9A9W10 B1CLM6 MW6-SBB-A1 U05-006 W04628 04/27/2005 09:59  Batch Analyte CAS# Result Unit CntU 2S TotU 2S Qual MDA TrcYield Method Alq Size Unit Analy Date/Time Ac 5118294 TC-99 14133-76-7 1.45E+03 pCi/L 2.1E+01 9.1E+01 1.05E+01 100.0 TC99_ETVDSK_LS 1.273E-01 L 05/11/200 20:25	5118294	TC-99	14133-76-7	6.07E+03	pCi/L	4.3E+01	3.6E+02		1.07E+0	1 100.0	TC99_ETVDSK_L	S 1.26E-01	L	05/11/200 19	):22	I
Sample Id:         Id:         User         Nbr         Nbr:         Type:         Solids%*:         Volume         On Date:         Date:           9G9A9W10         B1CLM6         MW6-SBB-A1         U05-006         W04628         04/27/2005 09:59           Batch         Analyte         CAS#         Result         Unit         CntU 2S         Qual         MDA         TrcYield         Method         Alq Size         Unit         Analy Date/Time         Ac           5118294         TC-99         14133-76-7         1.45E+03         pCi/L         2.1E+01         9.1E+01         1.05E+01         100.0         TC99_ETVDSK_LS         1.273E-01         L         05/11/200         20:25	5118295	Uranium	7440-61-1	3.01E+02	ug/L	3.6E+01	3.6E+01		8.38E-02	2	UTOT_KPA	2.50E-02	ML	05/09/200 10	1:23	1
Batch         Analyte         CAS#         Result         Unit         CntU 2S         Qual         MDA         TrcYield         Method         Alq Size         Unit         Analy Date/Time         Ac           5118294         TC-99         14133-76-7         1.45E+03         pCi/L         2.1E+01         9.1E+01         1.05E+01         100.0         TC99_ETVDSK_LS         1.273E-01         L         05/11/200         20:25	Sample Id:	ld:	User	Nbr		Nbr:	Тур						1	Date:		
5118294 TC-99 14133-76-7 1.45E+03 pCi/L 2.1E+01 9.1E+01 1.05E+01 100.0 TC99_ETVDSK_LS 1.273E-01 L 05/11/200 20:25								Oual	MDA	TreViold	Mothod	Ala Sizo				of
·	5118294	-						<b>W</b> uai						-		.UL
	5118295			3.51E+02	ug/L						UTOT KPA	2.50E-02				

STL Richland

U Qual - Analyzed for, but the result is less than the Mdc or gamma scan did not identify the nuclide. J Qual - No U qualifier has been assigned and the result is below the Reporting Limit (CRDL). B Qual- Analyte was found in the associated laboratory blank above the MDC.

Friday, May 13, 2005 STL Richland QC Blank Report Lab Code: STLRL

FormNbr: R

FormatType: FEAD

VersionNbr: 05

File Name: h:\Reportdb\edd\FeadIV\Rad\W04628.Edd, h:\Reportdb\edd\FeadIV\Rad\28816.Edd

Lab Sample Id:

G9DQ61AB

Sdg/Rept Nbr: W04628

28816

**Collection Date:** 04/27/2005 09:57

Client Id:

NA

Matrix:

**WATER** 

WATER

Sample On Date:

04/27/2005

Moisture/Solids%\*:

QC Type:

**BLK** 

**Received Date:** 

SAF Nbr

Contract Nbr MW6-SBB-A19981 Case Nbr

SAS Nbr

Decant

**Distilled Volume** 

File Id

FSuffix RTvp AΡ Н

Batch # / Analyt/ CAS# Qc Type

Result/ Orig Rst 5118294 TC-99 3.46E+00

Unit pCi/L

Tot/Cnt Uncert 2S 6.2E+00

**Test User** 

Qu-MDC al 1.08E+01 100.0

Tracer Spk Conc/ %Rec Yield

Suffix

Analy Method

Alia Size/ TC99\_ETVDSK 1.25E-01

Analyzed 05/12/2005

Date/Time RPD/ UCL

RER/ LCS UCL LCL/UCL Typ

D

R

14133-76-7 BLK

4.5E+00

L

02:38

STL Richland

rptFeadRadEdd v3.68

U Qual - Analyzed for, but the result is less than the Mdc or gamma scan did not identify the nuclide. J Qual - No U qualifier has been assigned and the result is below the Reporting Limit (CRDL).

B Qual- Analyte was found in the associated laboratory blank above the MDC.

Lab Code: STLRL Friday, May 13, 2005 STL Richland QC Blank Report FormNbr: R FormatType: FEAD VersionNbr: 05 File Name: h:\Reportdb\edd\FeadIV\Rad\W04628.Edd, h:\Reportdb\edd\FeadIV\Rad\28816.Edd Sdg/Rept Nbr: W04628 G9DRG1AB 28816 **Collection Date:** 04/27/2005 11:20 Lab Sample Id: **WATER WATER** Client Id: NA Matrix: Sample On Date: 04/27/2005 Moisture/Solids%\*: QC Type: **BLK** Received Date: SAF Nbr Contract Nbr **Test User** Case Nbr SAS Nbr Suffix Decant **Distilled Volume** File Id FSuffix RTvp MW6-SBB-A19981 AR Η RER/ LCS R Batch # / Analyt/ Result/ Tot/Cnt Qu-Tracer Spk Conc/ Analy Aliq Date/Time RPD/ MDC Method Analyzed UCL UCL LCL/UCL Typ Qc Type CAS# Orig Rst Unit Uncert 2S al Yield %Rec Size/ 7.9E-04 8.38E-02 UTOT KPA 2.50E-02 05/09/2005 D 5118295 Uranium -6.47E-03 ug/L U

ML

09:05

BLK

7440-61-1

7.9E-04

Friday, May 13, 2005

#### STL Richland QC Control Sample Report

Lab Code: STLRL

FormNbr: R

FormatType: FEAD

VersionNbr: 05

File Name: h:\Reportdb\edd\FeadIV\Rad\W04628.Edd, h:\Reportdb\edd\FeadIV\Rad\V8816.Edd

Lab Sample Id:

G9DQ61CS

Sdg/Rept Nbr: W04628

28816

**Collection Date:** 04/27/2005 09:57

Client Id:

NA

Matrix:

**WATER** 

**WATER** 

Sample On Date:

Moisture/Solids%\*:

QC Type:

BS

Received Date:

04/27/2005

SAF		ntract Nbr 6-SBB-A19981	Т	est User	Case	Nbr S	AS Nbr	Suffix	Decant	Distilled Volume	File	e ld		FSuffix AQ	RTyp H
Batch # / Qc Type	Analyt/ CAS#	Result/ Orig Rst	Unit	Tot/Cnt Uncert 2S	Qu- al	MDC	Tracer Yield	Spk Conc/ %Rec	Analy Method	Aliq Size/	Date/Time Analyzed	RPD/ UCL	RER/ UCL	LCS LCL/U	R CL Typ
5118294	TC-99	4.76E+02	pCi/L	3.4E+01		1.08E+01	100.0	5.48E+02	TC99_ETVDS	K 1.25E-01	05/12/2005			70	D
BS	14133-76-7			1.3E+01				86.9		L	03:41			130	

Friday, May 13, 2005

#### STL Richland QC Control Sample Report

Lab Code: STLRL

FormNbr: R

FormatType: FEAD

VersionNbr: 05

File Name: h:\Reportdb\edd\FeadIV\Rad\W04628.Edd, h:\Reportdb\edd\FeadIV\Rad\28816.Edd

Lab Sample Id:

G9DRG1CS

Sdg/Rept Nbr: W04628

28816

**Collection Date:** 04/27/2005 11:20

Client Id:

NA

Matrix:

WATER

WATER

Sample On Date:

Moisture/Solids%\*:

QC Type:

BS

Received Date:

04/27/2005

141010	) tai 0, 00 ii a0 /	• •				<b>40.76</b> 0									
SAF		ontract Nbr 6-SBB-A19981	T	est User	Case	Nbr	SAS Nbr	Suffix	Decant	Distilled Volume	File	e ld		FSuffix F	RTyp H
Batch # / Qc Type	Analyt/ CAS#	Result/ Orig Rst	Unit	Tot/Cnt Uncert 2S	Qu- al	MDC	Tracer Yield	Spk Conc/ %Rec	Analy Method	Aliq Size/	Date/Time Analyzed	RPD/ UCL	RER/ UCL	LCS LCL/UC	R CL Typ
5118295 <b>BS</b>	Uranium 7440-61-1	3.43E+01	ug/L	4.1E+00 4.1E+00		8.38E-0	2	3.62E+01 95.0	UTOT_KPA	2.50E-02 ML	05/09/2005 09:09			70 130	D

Friday, May 13, 2005 STL Richland QC Control Sample Report

FormNbr: R

FormatType: FEAD

VersionNbr: 05

File Name: h:\Reportdb\edd\FeadIV\Rad\W04628.Edd, h:\Reportdb\edd\FeadIV\Rad\V28816.Edd

Lab Sample Id:

G9DRG1DS

Sdg/Rept Nbr: W04628

28816

**Collection Date:** 04/27/2005 11:20

Lab Code: STLRL

Client Id:

NA

Matrix:

WATER

WATER

Sample On Date:

Mois	sture/Solids <sup>e</sup>	%*:		QC Type: BS						Received Date: 04/27/2005						
SAF		ontract Nbr 6-SBB-A19981	٦	Test User	Case	Nbr	SAS Nbr	Suffix	Decant	Distilled Volume	File	e Id	HAA	FSuffix AT	RTyp H	
Batch # / Qc Type	Analyt/ CAS#	Result/ Orig Rst	Unit	Tot/Cnt Uncert 2S	Qu- al	MDC	Tracer Yield	Spk Conc/ %Rec	Analy Method	Aliq Size/	Date/Time Analyzed	RPD/ UCL	RER/ UCL	LCS LCL/U	R CL Typ	
5118295	Uranium	3.36E+01	ug/L	3.4E+00		8.38E-0	2	3.62E+01	UTOT_KPA	2.50E-02	05/09/2005			70	D	
BS	7440-61-1			3.4E+00				93.0		ML	09:17			130		

Lab Code: STLRL Friday, May 13, 2005 STL Richland QC Duplicate Report FormNbr: R FormatType: FEAD VersionNbr: 05 File Name: h:\Reportdb\edd\FeadIV\Rad\V\04628.Edd, h:\Reportdb\edd\FeadIV\Rad\28816.Edd Sdg/Rept Nbr: W04628 G9A7L1ER 28816 Lab Sample Id: **Collection Date:** 04/27/2005 11:20 B1CLL4 WATER WATER Client Id: Matrix: Sample On Date: Moisture/Solids%\*: DUP 04/27/2005 QC Type: Received Date: Suffix Test User SAS Nbr File Id SAF Nbr Contract Nbr Case Nbr Decant **Distilled Volume** FSuffix RTyp U05-006 MW6-SBB-A19981 ΑM Н Analyt/ Batch #/ Result/ Tot/Cnt Qu-Tracer Spk Conc/ Analy Aliq Date/Time RPD/ RER/ LCS R MDC UCL Qc Type CAS# Orig Rst Unit Uncert 2S al Yield %Rec Method Size/ Analyzed UCL LCL/UCL Typ

UTOT KPA

2.50E-02

ML

05/09/2005

09:49

5118295 Uranium

7440-61-1

DUP

3.97E+01

4.00E+01

ug/L

4.7E+00

4.7E+00

8.38E-02

0.1

3

.6

20.0

D

Friday, May 13, 2005

#### STL Richland QC Duplicate Report

Lab Code: STLRL

FormNbr: R

FormatType: FEAD

Test User

VersionNbr: 05

File Name: h:\Reportdb\edd\FeadIV\Rad\W04628.Edd, h:\Reportdb\edd\FeadIV\Rad\V8816.Edd

Lab Sample Id:

G9A9E1ER

Sdg/Rept Nbr: W04628

28816

**Collection Date:** 04/27/2005 09:57

Client Id:

B1CLN0

Matrix:

**WATER WATER**  Sample On Date:

Moisture/Solids%\*:

QC Type:

**DUP** 

Suffix

Received Date:

04/27/2005

SAF Nbr U05-006

Contract Nbr MW6-SBB-A19981 Case Nbr

SAS Nbr

Decant

**Distilled Volume** 

File Id FSuffix RTyp

ΑO

Н

Batch # / Analyt/ Result/ Tot/Cnt Qu-Tracer Spk Conc/ Analy Aliq Date/Time RPD/ RER/ LCS R Qc Type CAS# Orig Rst Unit Uncert 2S al MDC Yield %Rec Method Size/ Analyzed UCL UCL LCL/UCL Typ 2.4E+01 5118294 TC-99 3.05E+02 1.05E+01 100.0 TC99 ETVDSK 1.294E-01 05/11/2005 11.2 1.9 D pCi/L DUP 14133-76-7 2.73E+02 1.0E+01 L 16:15 20.0 3

Friday, May 13, 2005 STL Richland Qc Matrix Spike Report Lab Code: STLRL

FormNbr: R FormatType: FEAD VersionNbr: 05 File Name: h:\Reportdb\edd\FeadIV\Rad\W04628.Edd, h:\Reportdb\edd\FeadIV\Rad\V28816.Edd

**Lab Sample Id**: G9A7L1DW **Sdg/Rept Nbr**: W04628 28816 **Collection Date**: 04/27/2005 11:20

Client Id: B1CLL4 Matrix: WATER WATER Sample On Date:

Moisture/Solids%\*: QC Type: MS Received Date: 04/27/2005

		, ,													
<b>SAF</b> U05-0		ontract Nbr 6-SBB-A19981	1	Test User	Case	Nbr :	SAS Nbr	Suffix	Decant	Distilled Volume	File	e Id	- was to the state of the state	FSuffix F	₹ <b>Typ</b> H
Batch # / Qc Type	Analyt/ CAS#	Result/ Orig Rst	Unit	Tot/Cnt Uncert 2S	Qu- al	MDC	Tracer Yield	Spk Conc/ %Rec	Analy Method	Aliq Size/	Date/Time Analyzed	RPD/ UCL	RER/ UCL	LCS LCL/UC	R L Typ
5118295	Uranium	3.24E+01	ug/L	9.8E+00		8.38E-0	2	3.60E+01	UTOT_KPA	2.50E-02	05/09/2005			60	D
MS	7440-61-1			9.8E+00				90.0		ML	09:42			140	

Friday, May 13, 2005 STL Richland Qc Matrix Spike Report Lab Code: STLRL

FormNbr: R FormatType: FEAD VersionNbr: 05 File Name: h:\Reportdb\edd\FeadIV\Rad\W04628.Edd, h:\Reportdb\edd\FeadIV\Rad\V08816.Edd

**Lab Sample Id**: G9A9E1DW **Sdg/Rept Nbr**: W04628 28816 **Collection Date**: 04/27/2005 09:57

Client Id: B1CLN0 Matrix: WATER WATER Sample On Date:

Moisture/Solids%\*: QC Type: MS Received Date: 04/27/2005

<b>SAF</b> U05-0		tract Nbr SBB-A19981	T	est User	Case	Nbr SA	S Nbr	Suffix	Decant I	Distilled Volume	File	e Id		FSuffix I	RТур Н
Batch # / Qc Type	Analyt/ CAS#	Result/ Orig Rst	Unit	Tot/Cnt Uncert 2S	Qu- al	MDC	Tracer Yield	Spk Conc/ %Rec	Analy Method	Aliq Size/	Date/Time Analyzed	RPD/ UCL	RER/ UCL	LCS LCL/UC	R L Typ
5118294 <b>MS</b>	TC-99 14133-76-7	3.09E+03	pCi/L	2.0E+02 3.2E+01		1.05E+01	100.0	3.62E+03 85.2	TC99_ETVDSI	< 1.268E-01 L	05/11/2005 15:13			60 140	D



# Data Review/Verification Checklist RADIOCHEMISTRY, First Level Review

5/13/2005 10:22:00 AM

Lot No., Due Date:

J5D270327,J5D270340; 05/12/2005

Client, Site:

384868; PGW 615HANFORD HANFORD

QC Batch No., Method Test: 5118294; RTC99 Tc-99 by LSC

SDG, Matrix:

W04628; WATER

SDG, Matrix:	W04 <b>628</b> ;	WATER			
	mplete; includes all	applicable analysis, dates, SOP numbers, and revisions?	Yea	No	N/A
2.0 QC Batch 2.1 Do the Summary/De	tailed Reports includ	de a calculated result for each sample listed on the QC Batch Sheet?	Yes∉	No	N/A
•		·	V		
2.2 Are the QC appropris	ate for the analysis i	ncluded in the batch?	Yes	No	N/A
2.3 Is the Analytical Batc	ch Worksheet compl	lete; includes as appropriate, volumes, count times, etc?	Yes	No	N/A
2.4 Does the Worksheet	s include a Tracer V			No	**********
3.0 QC & Samples	22.20				<b>V</b>
3.1 <b>Is the</b> blank results, y	yield, and MDA withi	in contract limits?	Yeş	No	N/A
3.2 Is the LCS result, yie	eld, and MDA within	contract limits?	Yeş	No	N/A
O. Ave the MC/MCD rea	ulta vialda and MD	A mithin contract limits?	V		BI/A
3.3 Are the MS/MSD res	uits, yields, and MD	A within contract limits?	Yes	No	N/A
.4 Are the duplicate res	ult, yields, and MDA	s within contract limits?	Yes	No	N/A
.5 Are the sample yield	s and MDAs within c	contract limits?	Yes	No	N/A
.0 Raw Data			٧		
.1 Were results calculate	ted in the correct un	its?	Yes	No	N/A
.2 Were analysis volum	es entered correctly	?	Yes	No	N/A
.3 Were Yields entered	correctly?		Voc	No	NI/A
	·		Yes	NO	N/A
.4 Were spectra review	ed/meet contractual	requirements?	Yes	No	N/A
.5 Were raw counts rev	iewed for ano <mark>malies</mark>	9?	Yeş	No	N/A
0 Other			٧		
.1 Are all nonconformar	nces included and n	oted?	Yes	No	N/A
.2 Are all required forms	s filled out?		Yeş	No	N/A
.3 Was the correct meth	hodology used?		Vog	No	N/Δ
			V		
.4 Was transcription ch	ecked?		Yes	No	N/A
.5 Were all calculations	checked at a minim	num frequency?	Yes	No	N/A
.6 Are worksheet entrie	s complete and cor	rect?	Yeş	No	N/A
.0 <b>Comments</b> on any No	o rosponso:		Y		313774747474
			vitorijitovjeva <b>nistinu</b>		***************************************
	/ · · · · ·				
First Level Review	Fam Qu	-clusar Date 5-13-05			
TL Richland			Page	- - 1	<del></del>
AS_RADCALCv4.8.09			90	•	



#### Data Review Checklist RADIOCHEMISTRY Second Level Review

QC Batch Number: 5718294

	37 - (-1)	NI - (a  N	DT/A (a/N
Review Item	Yes (√)	No (√)	N/A (√)
A. Sample Analysis		***************************************	
1. Are the sample yields within acceptance criteria?	-		<i>UP</i>
2. Is the sample Minimum Detectable Activity < the Contract	4		
Detection Limit?	J		
3. Are the correct isotopes reported?	2		
B. QC Samples			
1. Is the Minimum Detectable Activity for the blank result ≤ the			
Contract Detection Limit?			
2. Does the blank result meet the Contract criteria?			
3. Is the blank result < the Contract Detection Limit?			
4. Is the blank result > the Contract Detection Limit but the sample			.curi.
result < the Contract Detection Limit?			
5. Is the LCS recovery with contract acceptance criteria?	1		
7. Is the LCS Minimum Detectable Activity ≤ the Contract Detection			
Limit?		ļ	
8. Do the MS/MSD results and yields meet acceptance criteria?	Second		0
9. Do the duplicate sample results and yields meet acceptance	- Contraction of the Contraction		
criteria?			
C. Other	***************************************		-
Are all Nonconformances included and noted?			
2. Are all required forms filled out?	· · · · · · · · · · · · · · · · · · ·		
3. Was the correct methodology used?			
4. Was transcription checked?	- again		
5. Were all calculations checked at a minimum frequency?	**************************************		
6. Were units checked?			
Comments on any "No" response:			
	.en		and I have
Second Level Review: Juclie Waddel	1	Date: _	5/13/05



# Data Review/Verification Checklist RADIOCHEMISTRY, First Level Review

5/10/2005 11:25:38 AM

Lot No., Due Date:

J5D270327,J5D270340; 05/12/2005

Client, Site:

384868; PGW 615HANFORD HANFORD

QC Batch No., Method Test: 5118295; RUNAT UNat by KPA

SDG, Matrix:

W04628; WATER

OC he ICOC page complete; includes all applicable analysis, dates, SOP numbers, and revisions?			
······································	Yes	No	N/A
C Batch the Summary/Detailed Reports include a calculated result for each sample listed on the QC Batch Sheet?	Yes	No	N/A
the QC appropriate for the analysis included in the batch?	Yes	No	N/A
he Analytical Batch Worksheet complete; includes as appropriate, volumes, count times, etc?	Yes	No	N/A
es the Worksheets include a Tracer Vial label for each sample?	Yes	No	N/A
2.8 Samples			
he blank results, yield, and MDA within contract limits?	Yes	No	N/A
he LCS result, yield, and MDA within contract limits?	Yes	No	N/A
the MS/MSD results, yields, and MDA within contract limits?	Yes	No	N/A
the duplicate result, yields, and MDAs within contract limits?	Yes	No	N/A
the sample yields and MDAs within contract limits?	Yes	No	N/A
w Data re results calculated in the correct units?	Yeş	No	N/A
re analysis volumes entered correctly?	Yes	No	N/A
re Yields entered correctly?	Yes	No	N/A
re spectra reviewed/meet contractual requirements?	Yes	No	N/A
re raw counts reviewed for anomalies?	Yes	No	N/A
her all nonconformances included and noted?	Yes	No	N/A
all required forms filled out?	Yes	No	N/A
s the correct methodology used?	Yes	No	N/A
s transcription checked?		*************	ennen er
	Yes	No	N/A
re all calculations checked at a minimum frequency?	Yes		
re all calculations checked at a minimum frequency?  worksheet entries complete and correct?	Yes		N/A
	se the Worksheets include a Tracer Vial label for each sample?  ** & Samples  ** ne blank results, yield, and MDA within contract limits?  ** ne LCS result, yield, and MDA within contract limits?  ** the MS/MSD results, yields, and MDAs within contract limits?  ** the duplicate result, yields, and MDAs within contract limits?  ** the sample yields and MDAs within contract limits?  ** w Data  ** re results calculated in the correct units?  ** re analysis volumes entered correctly?  ** re Yields entered correctly?  ** re spectra reviewed/meet contractual requirements?  ** re raw counts reviewed for anomalies?  ** ner all nonconformances included and noted?  ** all required forms filled out?	The Analytical Batch Worksheet complete; includes as appropriate, volumes, count times, etc?  Yes state Worksheets include a Tracer Vial label for each sample?  Yes E Samples  The Blank results, yield, and MDA within contract limits?  Yes the LCS result, yield, and MDA within contract limits?  Yes the MS/MSD results, yields, and MDA within contract limits?  Yes the duplicate result, yields, and MDAs within contract limits?  Yes the sample yields and MDAs within contract limits?  Yes the sample yields and MDAs within contract limits?  Yes analysis volumes entered correct units?  Yes re spectra reviewed/meet contractual requirements?  Yes re spectra reviewed/meet contractual requirements?  Yes all required forms filled out?	ne Analytical Batch Worksheet complete; includes as appropriate, volumes, count times, etc?  Yes No is the Worksheets include a Tracer Vial label for each sample?  Yes No ne LCS result, yield, and MDA within contract limits?  Yes No the MS/MSD results, yields, and MDA within contract limits?  Yes No the duplicate result, yields, and MDAs within contract limits?  Yes No the sample yields and MDAs within contract limits?  Yes No the sample yields and MDAs within contract limits?  Yes No re analysis volumes entered correctly?  Yes No re yields entered correctly?  Yes No re spectra reviewed/meet contractual requirements?  Yes No ne raw counts reviewed for anomalies?  Yes No ner all nonconformances included and noted?  Yes No all required forms filled out?



#### Data Review Checklist RADIOCHEMISTRY Second Level Review

QC Batch Number: 5718295

A. Sample Analysis		<del></del>	N/A (√)	
1. Are the sample yields within acceptance criteria?			-	
2. Is the sample Minimum Detectable Activity < the Contract				
Detection Limit?	V			
3. Are the correct isotopes reported?	30			
B. QC Samples				
1. Is the Minimum Detectable Activity for the blank result ≤ the	2			
Contract Detection Limit?				
2. Does the blank result meet the Contract criteria?				Į
3. Is the blank result < the Contract Detection Limit?				
4. Is the blank result > the Contract Detection Limit but the sample				
result < the Contract Detection Limit?				
5. Is the LCS recovery with contract acceptance criteria?	/			
7. Is the LCS Minimum Detectable Activity ≤ the Contract Detection				
Limit?				1 1
8. Do the MS/MSD results and yields meet acceptance criteria?	· ·		105	13/0
9. Do the duplicate sample results and yields meet acceptance			7	
criteria?				
C. Other				
1. Are all Nonconformances included and noted?			er e	
2. Are all required forms filled out?	2.			
3. Was the correct methodology used?				
4. Was transcription checked?				
5. Were all calculations checked at a minimum frequency?				
6. Were units checked?	- same			
Comments on any "No" response:				
•				
•				
· · · · · · · · · · · · · · · · · · ·			, ,	
Second Level Review: Malue Whalole	Il :	Date:	5/13/05	
become bevor herview.	A Commence		1	

PNNL				ı	CHAIN OF	CUSTODY/S	SAMPLE ANA	LYSIS F	REQUEST	C.O.C.#	U05-006-3
Collector	WIEK		······································		Contact/R				Telephone No.	MSIN F.	AX
	HALL				DL STE				509-376-5056 Purchase Order/Charge		
Project Title							4101		Ice Chest No.	Temp.	*
200 UP1 REBOUNI Shinned To (Lab)	D. APRIL 20	005			Method of	TS ~ S & w S Shipment	<u>- H71</u>		SAWS _ 20 Bill of Lading/Air Bill N		
Severn Trent Incorner	orated Rich	land				VEHICLE					
CERCLA					<u>_</u>			JKIIY	Offsite Property No.		,
	76-	7 1	IARKS 4	)5E	5/12/c	27	SPECIAL INSTRUCTION Batch all PNNL GW samples requested. Submit invoices & deliverable.	submitted under "I	U" SAF's into one SDG, not to	Total Activity Exempt a exceed rapid turnaround	tion: Yes ☑ No ☐ time of 15 days if
W04(	e 28		De	u	5/12/0	15					
Sample No.	Lab ID	*	Date	Time	No/Type Container			Sample Analys	sis		Preservative
B1CLL4		W [	1-27-05	1120	1x20-mL P	Activity Scan				-	None
B1CLL4		w	1	1120	1x500-mL P	TC99_ETVDSK_LSC	: Tc-99 (1)	G9 A	71		HCI to pH <2
B1CLL4		w	4	1	1x500-mL G/P	UTOT_KPA: Uranium	(1)				HNO3 to pH <2
		egthanking							,		, , , , , , , , , , , , , , , , , , , ,
					$\bigcap$						
				4-27	-05					~~	
Relinquished By	Print		Sign		Date/Time / 30		Print Sig	çn	Date/Time/430	M	atrix *
Relinquished By			<u> Del</u>		APR 2 7 2005  Date/Time	Jeff Juns and Received By	- JAI Ju	A	PR 2 7 2005  Date/Time	S = Soil SE = Sediment SO = Solid SL = Sludge	DS = Drum Solid DL = Drum Liqui T = Tissue WI = Wipe
Relinquished By					Date/Time	Received By			Date/Time	W = Water O = Oil A = Air	I. = Liquid V = Vegetation X = Other
Relinquished By					Date/Time	Received By		Militari Vise	Date/Time		
FINAL SAMPLE DISPOSITION	Disposal M	ethod (e	e.g., Return to c	customer, per l	ab procedure, used in prod	cess)	Disposed E	Зу		Date/T	ime

PNNL					СНАІ	N OF	CUSTODY/	SAMPLE ANALY	YSIS R	EQUEST	C.O.	U	05-006-1
Collector	ATEX					Contact/Re		***************************************	ľ	Telephone No.	MSIN	FAX	~
SAF No.	HALL					DL STEV	Prigin		]	509-376-5056 Purchase Order/Chare	ze Code		
U05-006 Project Title						HANFOR		3	]	Ice Chest No.	T	emp.	*
200 UP1 REBOUN Shipped To (Lab)	D. APRIL 2	005				Method of	DTS-SAV	us - 491		lce Chest No. ちょんしらってで Bill of Lading/Air Bill			
Severn Trent Incorr	orated Rich	ıland				GOVT. V	/EHICLE	· // withink-wind	<u></u>		110.		
Protocol CERCLA				-			Prio	rity: 15 Days PRIOR	IIX	Offsite Property No.			
POSSIBLE SAMPLE	167		ARKS	5D 10e	27	037	27	SPECIAL INSTRUCTIONS Batch all PNNL GW samples subm requested. Submit invoices & deliverables to I.		" SAF's into one SDG, not			Yes V No Lof 15 days if
W041	360	]		<u>ve</u>	<u> 511</u>	9102							
Sample No.	Lab ID	*	Date	Time	No/Type	Container		San	nple Analysi	s			Preservative
B1CLN4		W	1-27-05	0054	1x20-mL	Р	Activity Scan	1					None
B1CLN4		w	1	ĺ	1x500-mL	Р	TC99_ETVDSK_LSC	C: Tc-99 (1)	69	ATN			HCl to pH <2
B1CLN4		w			1x500-mL	G/P	UTOT_KPA: Uraniun	n (1)					HNO3 to pH <2
				w/////////////////////////////////////									
		$\rightarrow$			+	_)			-				
						HIVINIA AND AND AND AND AND AND AND AND AND AN							
				4-27	-05								
									***************************************				
		LL_											
Relinquished By F. M. HALL	Print	ĦĄ.	Sign Hu	C/AD	Date/	<sup>(ime</sup> <i>1430</i> 2005	Received By  Jeff Jens	Print Sign	APR	2 7 2005			DS = Drum Solid
Relinquished By					Date/	ime	Received By	/ / /		Date/Time	SE = Sed   SO = Soli   SL = Sluc   W = Wat	d løe	DL = Drum Liqui T = Tissue WI = Wine L = Liquid
Relinquished By					Date/	Time	Received By			Date/Time	O = Oil A = Air		V = Vegetation X = Other
Relinquished By					Date/	Time	Received By			Date/Time			,
FINAL SAMPLE DISPOSITION	Disposal M	sethod (e	.g., Return to	customer, per l	ab procedure	, used in proce	ess)	Disposed By				Date/Time	



### Sample Check-in List

Date/T	Sime Received: 04 2705 1420			
Client:	: PUN SDG #: WO	1627 NA[] S	AF#: _ 405-006	NA [ ]
	Order Number: <u>JSD27082</u> 7		#_405-006-1	
Shippi	ng Container ID: SAWS 203			
1.	Custody Seals on shipping container intact	?	NA[] Yes [/] No	)[]
2.	Custody Seals dated and signed?		NA[] Yes [] No	
3.	Chain of Custody record present?		Yes [/] No	
4.	Cooler temperature: NA [7] 5.	Vermiculite/packing	•	
6.	Number of samples in shipping container:_	4		,
7.	Sample holding times exceeded?		NA [/] Yes [] No	[]
8.	Samples have:tapecustody seals		rd labels opriate samples label	ls
Э.	Samples are:bin good conditionbroken		ing air bubbles amples requiring hea	nd space)
0.	Sample pH taken? NA[] pH<2	2[] pH>2[] p	H>9 [ ]	
1.	Sample Location, Sample Collector Listed? *For documentation only. No corrective act	* ion needed.	Yes [/] No	)[]
2.	Were any anomalies identified in sample rec	eipt?	Yes[] No	KÍ
3.	Description of anomalies (include sample nu	mbers):		
ample (	Custodian: 1/1/ Jr	Date:	92708	
Clien	at Sample ID Analysis Requested	Condition	Commen	ts/Action
	prined onby	Person contac	cted	
	tion necessary; process as is.			
	nager	Date		
_(1/4 1)/	DE PAU S			

PNNL		****			CHAIN OF	CUSTODY/	SAMPLE ANALYSIS	REQUEST		105-006-21 1 of 1
Collector R. B	DEWIN	GM	ON		Contact/Re		, , , , , , , , , , , , , , , , , , , ,	Telephone No. MS		
SAF No.	UCAA HA	<u> </u>	~ · · · ·		DL STEV Sampling (			509-376-5056		
U05-006					HANFO			Purchase Order/Charge Code		>
Project Title 200 UP1 REBOU	מממג מוגד	005				775 - SAWS	. 493	Ice Chest No SML 584	Temp.	
Shinned To (Lab)	JND. APRIL 2	2005			Method of	Shipment		Bill of Lading/Air Bill No.	<u> </u>	
Severn Trent Inc	ornorated Ric	hland				VEHICLE				
Protocol CERCLA						Prio	ority: 15 Days PRIORITY	Offsite Property No.		
POSSIBLE SAMP	le hazard 7 Ge 7 ( 6 Q 7	S/RE	CMARKS C	50:	27084 5 lia lo	() 15	SPECIAL INSTRUCTIONS Ho Batch all PNNL GW samples submitted under requested. Submit invoices & deliverables to DL Stewart	"U" SAF's into one SDG, not to exceed		n: Yes V No Le of 15 days if
Sample No.	Lab ID	*	Date	Time	No/Type Container		Sample Anal	ysis		Preservative
B1CLM8		W	4-27-05	8001	1x20-mL P	Activity Scan			·······	None
B1CLM8		W	1	1	1x500-mL P	TC99_ETVDSK_LSC	C: Tc-99 (1)	A9L		HCI to pH <2
B1CLM8		w		17	1x500-mL G/P	UTOT_KPA: Uraniun				HNO3 to pH <2
			* <del>"</del>	<b>*</b>						
		<b> </b>								
					1,964/8800000000000000000000000000000000000					
			,							
		<u> </u>								
							* *************************************			
							·			
		<b> </b>								
Relinquished By	Print	L	Sign	<u> </u>	Date/Time/	Received By	Pript // Sign	Date/Time ( 444)	Matr	ix *
Relinquished By D.R. BRE	MINGIT	JIN C	Hurne.	towar	20 2 7 200E	Jeft Tuns	- ff fr	APR / / ZUUJ	= Soil	DS = Drum Solid
Relinquished By		V			Date/Time	Received By	/-//	SO SL	= Sediment = Solid = Sludge = Water	DI. = Drum Liqui T = Tissue WI = Wine L = Liquid
Relinquished By					Date/Time	Received By		Date/Time O	= Oil = Air	V = Vegetation X = Other
Relinquished By					Date/Time	Received By		Date/Time		

Disposed By

Date/Time

FINAL SAMPLE

DISPOSITION

Disposal Method (e.g., Return to customer, per lab procedure, used in process)

PNNI

C.O.C. #

TIOS 006 20

2 1 1 1 1 2 2					CHAIN (	OF CUSTODY/	SAMPLI	E ANALYSIS I	REQUEST		U	J <b>ラ</b> -UU	0-29
							•			P	age <u>1</u>	of	1
Collector D.R	L BREW	MINC	MOTE			act/Requester L STEWART			Telephone No. 509-376-5056	MSIN	FAX		
SAF No. U05-006					Samp	pling Origin ANFORD SITE			Purchase Order/Char				7
Project Title 200 UP1 REBOU	INID APRIL '	2005				DTS-SAWS	H 93		Ice Chest No. 3ml 584 Temp.				
Shinned To (Lah) Severn Trent Inco		Occupant Control of Co			Meth	od of Shipment			Bill of Lading/Air Bill	No.			
Protocol	ornorated kic	hlana			resources and the second	OVT. VEHICLE Pric	ority: 15 Days	PRIORITY	Offsite Property No.	- AVIII			
CERCLA POSSIBLE SAMP "Q-5	76	7/	7	5D	2703 - 5112	340	SPECIAL INS Batch all PNNL requested.			Total Activity Exe to exceed rapid turnaro	mption: und time (	Yes 🗹 of 15 days	No Lif
Sample No.	Lab ID	0   <sub>*</sub>	Date	Time	No/Type Conta			Sample Analy	cic			Dracan	votivo
B1CLN2	Lavin	10/	4-24-05	<del> </del>	1v20 ml P	Activity Scan	<del></del>	Sample Amaly	515			Preserv	/ative
B1CLN2		W.	1	1/37	1x500-mL P	TC99_ETVDSK_LSC	C: Tc-99 (1)	<u> </u>	A9H			HCl to p	pH <2
B1CLN2		w			1x500-mL G/P	UTOT_KPA: Uraniun	n (1)	1 600	· · · · · · · · · · · · · · · · · · ·			HNO31	to pH <2
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		+						1AMATANA.					
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-		+		<del></del>	,								
	<u> </u>		L	<u> </u>		00.00			nD.				
Relinquished By D.R. BF	REWING	OTÉ	MODE	XIIIII,		HATRECEIVED BY  105  JULY January	Print	Sign	Date/Time / / /	<b>'</b>	Matrix	*	
Relinquished By				en vo	APR 2 7 20 Date/Time	Received By		<i>// -</i>	APR 2 7 2005  Date/Time	S = Soil SE = Sediment SO = Solid SL = Sludge W = Water	t	DI. = 1 T = 1 WI = 1	Drum Solid Drum Liani Tissue Wine Lianid
Relinquished By					Date/Time	Received By			Date/Time	O = Oil A = Air		V =	Vegetation Other
Relinquished By					Date/Time	Received By			Date/Time	<b></b>			
FINAL SAMPLE DISPOSITION		√lethod .	(e.g., Return to	customer, per	r lab procedure, used i	in process)		Disposed By		Da	te/Time		

PNNL						CHAIN OF	CUSTODY/	SAMPLE	ANALYSIS	REQUEST		05-006-25
Collector	R. BRE	WII	<del>vator</del>			Contact/R	Pagnester			Telephone No.	Page MSIN FAX	1 of 1
COMPLETOR						DL STE	EWART			509-376-5056		
SAF No. U05-006						Sampling HANFO	Origin ORD SITE			Purchase Order/Charg	ge Code	6
Project Title 200 UP1 REBOU	מוממא מואו	005				01	15 - SAWS	463		Ice Chest No. Sull	S64 Temp.	
Shinned To (Lah)		SAPERIC SAVERES		en proximo en po	Noted and descriptions of the second	Method of	f Shipment	ķ · F		Bill of Lading/Air Bill		
Severn Trent Inc Protocol	ornorated Ric	hland		decinidados e	1600 0000000000000000000000000000000000	GOVT.	VEHICLE			Offsite Property No.		
CERCLA	I E HAZADD	C/D173	MADIZE				Pric	ority: 15 Days	PRIORITY			**
5767	LE HAZARD	S/RE	JS	E	9	70340 5/12/0	)	requested.		old Time er "U" SAF's into one SDG, not to	Total Activity Exemption to exceed rapid turnaround time	
W041	e28		C	بدا	<u></u>	5/12/0	5	Submit invoices to	denverables to DL Stewar	iq 110112		
Sample No.	Lab ID	*	Date	ı	ime	No/Type Container			Sample Ana	alysis		Preservative
B1CLN0		W	4-27-05	0	957	1x20-mL P	Activity Scan					None
B1CLN0		w	1		1	1x500-mL P	TC99_ETVDSK_LS0	D: Tc-99 (1)	CG F	7915		HCl to pH <2
B1CLN0	*	w			ALESS COMMAND	1x500-mL G/P	UTOT_KPA: Uraniur	n (1)		V L has		HNO3 to pH <2
				<del>                                     </del>						* * **********************************		
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									***************************************			
MANUA								11				
				h							100.000	
				{		* 4	1				o. /	
Relinquished By D.R. BR	EWING	TON	(V)hi	Wu	:	Date/Time	Received By  Jeff In	Print	Sign	Date/Time / 1/1/ APR 2 7 2005	Matri	
Relinquished By			<i>J'</i>		1	Date/Time	Received By	<del></del>		Date/Time	S = Soil SE = Sediment SO = Solid SL = Sludge	DS = Drum Solid DL = Drum Liani T = Tissue WI = Wine
Relinquished By						Date/Time	Received By	. 116-31-2-4-31-1		Date/Time	W = Water O = Oil A = Air	L = Liquid V = Vegetation X = Other
Relinquished By					•	Date/Time	Received By			Date/Time	***************************************	A STATE OF THE STA
FINAL SAMPLI DISPOSITION	E Disposal N	Aethod (	(e.g., Return to	custon	ner, per la	ab procedure, used in pro-	cess)		Disposed By	The Printer of the Control of the Co	Date/Time	

PNNL	СНА	IN OF CUSTODY.	/SAMPLE ANALYSIS I	REQUEST	C.O.C. # U	05-006-10
Collector R.T. SICKLE		Contact/Requester DL STEWART			MSIN FAX	
SAF No. U05-006		Sampling Origin	WAS IN	509-376-5056 Purchase Order/Charge Co		
Project Title 200 UP1 REBOUND, APRIL 2005		HANFORD SITE	S- H86	Ice Chest No. SAUS-1	113 Temp.	
Shinned To (Lab)		Method of Shipment		Bill of Lading/Air Bill No.		
Severn Trent Incorporated Richland Protocol		GOVT. VEHICLE	iority: 15 Days PRIORITY	Offsite Property No.		
CERCLA POSSIBLE SAMPLE HAZARDS/REMA "O - 57671  WO4628	Due 5			"U" SAF's into one SDG, not to exc	tal Activity Exemption: ceed rapid turnaround time	Yes No of 15 days if
Sample No. Lab ID *		pe Container	Sample Analy	rsis		Preservative
B1CLM1 W	27/5 1019 1x20-mL					None '
B1CLM1 W	1x500-m	nL P TC99_ETVDSK_LS	SC: Tc-99 (1) G9A	99		HCI to pH <2
B1CLM1 W	1x500-m	nL G/P UTOT_KPA: Uraniu		£ 1		HNO3 to pH <2
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Relinquished By SICKL Print	APR 2 7 2005 Date:	e/Time Received By  [Kath Jan]	Print Sign APR 2	7-2005 te/Time	Matrix S = Soil	C *  DS = Drum Solid
Relinquished By	Date	e/Time Received By	7/1	Date/Time SI	SE = Sediment SO = Solid SL = Sludge	DI. = Drim Liqui T = Tissue WI = Wine L = Liquid
Relinquished By	Date/	e/Time Received By	N	Date/Time O A	) = Oil	V = Vegetation X = Other
Relinquished By	Date/	e/Time Received By		Date/Time	Alle	
FINAL SAMPLE Disposal Method (e.g.	Return to customer, per lab procedur	are used in process)	Disposed By		Date/Time	

DISPOSITION

PNNL	30 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4				CHAI	V OF (	CUSTODY/S	SAMPLE	ANALYSIS I	REQUEST		U05-006-7
CollegoT.SIC	KLE		· · · · · · · · · · · · · · · · · · ·	***************************************	C	Contact/Red				Telephone No. 509-376-5056	MSIN FAX	
SAF No.					s	Sampling O	rigin			Purchase Order/Chars	re Code	
U05-006 Project Title				~~~		HANFOR	RDSITE DTS - SAU	, S= UGC		Ice Chest No. SALU:	Temp.	
200 UP1 REBOU Shinned To (Lab)	ND. APRIL 2	2005		•		Method of S	-	0 3' HOV		<del>}</del>		
Severn Trent Inco	ornorated Ric	hland				GOVT. V				Bill of Lading/Air Bill	INO.	
Protocol CERCLA							Prior	rity: 15 Days	<b>PRIORITY</b>	Offsite Property No.		
POSSIBLE SAMPI	76	7 /	MARKS C	)5F	) 27 - 5	031	40 los	requested.			Total Activity Exemption to exceed rapid turnaround time	: Yes 🗹 No 🗆 of 15 days if
Sample No.	Lab ID	*	Date	Time	No/Type (				Sample Analy	sis		Preservative
B1CLL8		W	4/27/5	1711	1x20-mL P	)	Activity Scan					None
B1CLL8		W		1	1x500-mL	P	TC99_ETVDSK_LSC	: Tc-99 (1)	> G9	A 95		HCl to pH <2
B1CLL8		w	1	<b>V</b>	1x500-mL	G/P	UTOT_KPA: Uranium	(1)	/ (11	NU		HNO3 to pH <2
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								<del> </del>	1			
<u></u>				2				***************************************				
Relinquished By SICK	Print		Sign	PR 2 7	2005 (	me 430	Received By Tell Juny	Print	Sign APR 27	2003 <sup>ate/Time</sup>	Matri S = Soil	DS = Drum Solid
Relinquished By	/ Ar	-1-			Date/Ti	me	Received By			Date/Time	SE = Sediment SO = Solid SL = Sludge W = Water	DL = Drim Liqui T = Tissue WI = Wine L = Liquid
Relinquished By	MANUFACTURE AND THE STATE OF TH				Date/Ti	me	Received By			Date/Time	O = Oil A = Air	V = Vegetation X = Other
Relinquished By				٠.	Date/Ti	me	Received By			Date/Time		

Disposed By

Date/Time

FINAL SAMPLE DISPOSITION Disposal Method (e.g., Return to customer, per lab procedure, used in process)

PNNL					CHAIN OF	CUSTODY/	SAMPLE	ANALYSIS F	REQUEST	C.O.C.#	05-006-13 1 of 1
Collector R. T. S	SICKLE	4			Contact/Re				Telephone No.	MSIN FAX	
SAF No.					DL STEV Sampling O	Origin			509-376-5056 Purchase Order/Charge	e Code	
U05-006 Project Title					HANFOR		.1 0.4		Ice Chest No. Saus	Temp.	÷
200 UP1 REBOU Shinned To (Lab)	JND. APRIL 2	005			Method of S	S-SAWS- Shipment	H20		Bill of Lading/Air Bill N		
Severn Trent Inco	omorated Ric	nland			GOVT. V	VEHICLE					
CERCLA		~ ~~ ~~				Prio	ority: 15 Days	PRIURITY	Offsite Property No.		
POSSIBLE SAMPI	767	1	<		27034		requested.		U" SAF's into one SDG, not to	Total Activity Exemption o exceed rapid turnaround time	
404	628			Dero	25/12/0	05					
Sample No.	Lab ID	*	Date	Time	No/Type Container			Sample Analys	sis		Preservative
B1CLM4		W	4/27/5	1045	1x20-mL P	Activity Scan				<u> </u>	None
B1CLM4	,	w			1x500-mL P	TC99_ETVDSK_LSC	C: Tc-99 (1)	> 69	7A97	· · · · · · · · · · · · · · · · · · ·	HCl to pH <2
B1CLM4		w	4	1	1x500-mL G/P	UTOT_KPA: Uranium	m (1)				HNO3 to pH <2
							·· , · · · · · · · · · · · · · · · · ·				
	1	$\vdash$						·······································	and the second s		
	-	$\vdash$								· · · · · · · · · · · · · · · · · · ·	
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Posting and Day	Deint		Sim		Data Times - 1	In	Divine	o:-ADD a	D. P.		
Retirement of BCK			Sign	APR 27	<b>2005</b> (イタン	T. H. Tans	Print	SIGNIK 27	2005 Pate/Time (	Matri	
Relinquished By	111111			AMMERICAN ST		Received By	11111		Date/Time	SF = Sediment SO = Solid SL = Sludge	DS = Drum Solid DI, = Drum Liani T = Tissue WI = Wine L = Limid
Relinquished By		***************************************			Date/Time	Received By			Date/Time	W = Water O = Oil A = Air	I. = Limid V = Vegetation X = Other
Relinquished By					Date/Time	Received By			Date/Time		MATERIAL CONTRACTOR CO
FINAL SAMPLE DISPOSITION	-   ^	1ethod (e	g., Return to	customer, per l	lab procedure, used in proces	:ss)		Disposed By	***************************************	Date/Time	

PNNL					CHAI	N OF (	CUSTODY/S	SAMPLE ANALYSIS I	REQUEST		J <b>05-006-9</b> of 1
Collector R.T. SIC	·VI E					Contact/Re	·		Telephone No.	MSIN FAX	
SAF No.	of blacker					DL STEV	)rigin		509-376-5056 Purchase Order/Charg	e Code	
U05-006 Project Title						HANFOR		1184-	Ice Chest No. SAWS	Temp.	
200 UP1 REBOUNI Shinned To (Lab)	D. APRIL 2	005				Method of S	Shipment		Bill of Lading/Air Bill I		
Severn Trent Incom Protocol	orated Rich	land				GOVT. V	ZEHICLE		Offsite Property No.		
CERCLA	TT. Z. DD	~ ~ ~ ~ ·	~~~				Prior	rity: 15 Days PRIORITY	l		
POSSIBLE SAMPLE **	G7	S/REMA /	CRKS C) (	5DE	270	34	0	SPECIAL INSTRUCTIONS Hold Batch all PNNL GW samples submitted under " requested. Submit invoices & deliverables to DL Stewart, I	U" SAF's into one SDG, not to	Total Activity Exemption: o exceed rapid turnaround time	Yes ☑ No ☐ of 15 days if
W046	28		D	Je 5	110	105		Submit divorces & deriverables to DL Siewall, I	INNL		
Sample No.	Lab ID	*	Date	Time	No/Type	Container		Sample Analys	sis		Preservative
B1CLM0		W	27/5	1019	1x20-mL	Р	Activity Scan	\			None
B1CLM0	-	w			1x500-mL	Р	TC99_ETVDSK_LSC	: Tc-99 (1) ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~	190		HCI to pH <2
B1CLM0		w	V	4	1x500-mL	G/P	UTOT_KPA: Uranium				HNO3 to pH <2
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					***************************************						
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								A CONTRACTOR OF THE CONTRACTOR			
										*****	
Relinquished By	Print		A	PR 27	Date/I 2005	1 <sup>ime</sup> 430	Received By  Jeff Jungs	Print Sign APR 2	7 2005 (430)	Matrix S = Soil	* DS = Drum Solid
Relinquished By	1 6	H		-	Date/I	ime	Received By	t /1 /	Date/Time	SE = Sediment SO = Solid SL = Sludge	DI. = Drum Liqui T = Tissue WI = Wipe
Relinquished By					Date/I	ime	Received By		Date/Time	W = Water O = Oil A = Air	L = Limid V = Vegetation X = Other
Relinquished By			******	***************************************	Date/I	ime	Received By		Date/Time		
FINAL SAMPLE DISPOSITION	Disposal M	ethod (e.g.	, Return to	customer, per l	ab procedure	used in proce	ss)	Disposed By		Date/Time	

PNNL				i	CHAI	N OF	CUSTODY/S	SAMPLE AN	NALYSIS F	REQUEST		05-006-17
Collector Refe	SICKLE	<u> </u>	1			Contact/Re				Telephone No.	MSIN FAX	
SAF No.						DL STEV	)rigin			509-376-5056 Purchase Order/Charg	e Code	
U05-006 Project Title						HANFOI		1164-		Ice Chest No. らんい	Temp.	
200 UP1 REBOUN Shinned To (Lab)	ID. APRIL 2	005				Method of	S - SAWS- Shipment	H20		Bill of Lading/Air Bill 1		
Severn Trent Incorr Protocol	oorated_Rich	land				GOVT. V	/EHICLE		·	Offsite Property No.		
CERCLA POSSIBLE SAMPLE	F HAZADD	C/DEMAI	DIVC					rity: 15 Days P] SPECIAL INSTRUC	KIUKITY	Time	Total Activity Franchis	. X/22 X/ N/2
and the same	67	S/RENIAI (	35	DE	170	34	0		aples submitted under "I	U" SAF's into one SDG, not t	Total Activity Exemption o exceed rapid turnaround time	of 15 days if
WO4	622	3	0	ue	51	12/0	15		·			
Sample No.	Lab ID		Date	Time		Container			Sample Analys	is		Preservative
B1CLM6		W	27/5	0959	1x20-mL	Р	Activity Scan	•				None
B1CLM6		w			1x500-mL	. P	TC99_ETVDSK_LSC	: Tc-99 (1)	69	A9W		HCl to pH <2
B1CLM6	1/4	w	<b>y</b>	4	1x500-mL	. G/P	UTOT_KPA: Uranium	1 (1)		. , , , ,		HNO3 to pH <2
							h : 15	D.		The second second		
Relinquished By	Print ICKLE	The	Sign	R 272	Date/1	1430	Received By  Self Junsa	Print fr	APR 2 7 20	Date/Time	Matri	
Relinquished By		7-6			Date/	Γime	Received By	////		Date/Time	S = Soil   SE = Sediment SO = Solid SL = Sludge	DS = Drum Solid DL = Drum Limi T = Tissue WI = Wine
Relinquished By					Date/	Time	Received By			Date/Time	W = Water O = Oil A = Air	I. = Liquid V = Vegetation X = Other
Relinquished By					Date/	Γime	Received By			Date/Time	<u> </u>	
FINAL SAMPLE DISPOSITION	Disposal N	fethod (e.g.,	Return to	customer, per 1	ab procedure	, used in proce	ess)	Dispo	osed By		Date/Time	

											C.C	D.C. #	
PNNL					CHAII	V OF	CUSTODY/S	SAMPLE ANA	LYSIS F	REOUEST		Ţ	J <b>05-006-5</b>
										-	515s	Dana 1	-£ 1
College I. SICK					-	Contact/Re	auester	·		Telephone No.	MSIN	Page 1 FAX	of <u>1</u>
-5-						DL STEV	VART			509-376-5056		******	
SAF No. U05-006						Sampling C HANFOR				Purchase Order/Char			
Project Title 200 UP1 REBOUNI	Э. АРВП. 20	105				-DT	S-SAWS-	H86		Ice Chest No. SAW	5-112	Temp.	
Shinned To (Lab)		nasanan magamanan par				Method of	Shipment			Bill of Lading/Air Bill			
Severn Trent Income Protocol	orafed_Rich	land				GOVT. V		rity: 15 Days PRI	ODITY	Offsite Property No.			
CERCLA POSSIBLE SAMPLE	HAZARD	S/REMA	ARKS					SPECIAL INSTRUCTION	ORITY	   Time	Total Activit	v Evemption:	Yes V No
(1-5)	67	- (	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	DE	270	340	0	Batch all PNNL GW samples requested.	submitted under "	U" SAF's into one SDG, not	to exceed rapid to	urnaround time	of 15 days if
W040	028	<b>&gt;</b>	C	lee	51	12/0	05	Submit invoices & deliverabl	es to DL Stewart, I	INNL			
Sample No.	Lab ID	*	Date	Time	No/Type (	Container		\	Sample Analys	sis			Preservative
B1CLL6		WU	12-15	0934	1x20-mL F	)	Activity Scan						None
B1CLL6		w	1	1	1x500-mL	Р	TC99_ETVDSK_LSC	Tc-99 (1)	091	99R			HCl to pH <2
B1CLL6		w	$\forall$	1/	1x500-mL	G/P	UTOT_KPA: Uranium	(1)	<u> </u>	9 //			HNO3 to pH <2
			<u> </u>					the moralists			2		
										<u> </u>			
											***************************************		
			·										
				W. H. and G. March									
								•					
Relinquished BSICK	Print		A	PR 27	2005 j	me 4 30	Received By  Jeff Jung	Print	<sup>gn</sup> 7 2005	Date/Time		Matrix	
Relinquished By	160	11			Date/Ti	, ,	Received By		200 8 mm - 60.48	Date/Time	S = Soi SE = Sec SO = Soi	diment	DS = Drum Solid DL = Drum Liqui T = Tissue
								¥ . 00			SO = Sol   SL = Slu   W = Wr	ıdge	T = Tissue WI = Wine L = Limid
Relinquished By					Date/Ti	me	Received By			Date/Time	O = Oil A = Air		V = Vegetation X = Other
Relinquished By					Date/Ti	me	Received By	11 11 11 11 11 11 11 11 11 11 11 11 11		Date/Time			
FINAL SAMPLE DISPOSITION	Disposal M	ethod (e.g	g., Return to	customer, per l	ab procedure,	used in proce	sss)	Disposed	Ву			Date/Time	



### Sample Check-in List

Dat	e/Time Received:_	042705 1430				
Clie	ent: Plak	SDG #: <u>UUY</u>	628 NA	[] SAF#:	U05-006	NA[]
Wor	rk Order Number:	5D270340				<u> </u>
Ship	pping Container ID:	SAWS 113	Air Bill #			
1.	Custody Seals	on shipping container intact?		NA	[] Yes [] No	[]
2.	Custody Seals	dated and signed?		NA	[] Yes [/] No	[]
3.	Chain of Custo	dy record present?		•	Yes [/] No	[]
4.	Cooler tempera	ture:NA [/ 5.7	Vermiculite/pa	cking mater	ials is NA[] W	Vet [] Dry [/]
6.		ples in shipping container:				1, 79,
7.	Sample holding	times exceeded?		NA	[/] Yes [] No [	
8.	Samples have:tapetoustody s	eals	X	_hazard_lab		
9.	Samples are:in good cobroken	ondition	-	_leaking _have air bu		
10.	Sample pH take	n? NA[] pH<2	pH>2[	] pH>9[	]	
11.		n, Sample Collector Listed? * tion only. No corrective active			Yes [] No	[]
12.	Were any anoma	lies identified in sample rece	ipt?		Yes[] No	ri ข
13.	Description of a	nomalies (include sample nur	mbers):			
***************************************						
Sample	e Custodián:	Mp	Date:	04 27 05		And the second section of the section o
CI	ient Sample ID	Analysis Requested	Condi	tion	Comments	s/Action
Client I	nformed on	by	Person	contacted	•	
	action necessary; pro					
Project i	Manager		Date			
LS-023,	9/03, Rev. 5			<del>-</del>		



### Sample Check-in List

Date	/Time Received: <u>Ø</u>	4 27 05		
Clier	nt: PUTW	SDG #: 460°	4628 <sub>NA[]</sub> SAF	#: <u>U05-006</u> NA[]
Worl	k Order Number:	50270340	Chain of Custody #	405-006-25,29,21
Shipp	oing Container ID:	DTS-SAW H9	3 Air Bill #	
1.	Custody Seals	on shipping container intact	t?	NA[] Yes [/] No[]
2.	Custody Seals	dated and signed?	1	NA[] Yes [/] No[]
3.	Chain of Custoo	dy record present?	· .	Yes [] No []
4.	Cooler tempera	ture:NA [/] 5	.Vermiculite/packing ma	terials is NA[] Wet[]Dry,[
6.		oles in shipping container:_	<i>-</i>	,
7.	Sample holding	times exceeded?	N	'A [/] Yes [] No []
8.	Samples have:			
	tape Xcustody se	eals	hazard   appropr	labels iate samples labels
9.	Samples are:  X in good co	ondition		bubbles ples requiring head space)
10.	Sample pH taker	n? NA[] pH<	2 // pH>2 [] pH>	9[]
11.	Sample Location *For documentat	, Sample Collector Listed? ion only. No corrective ac	* tion needed.	Yes [/] No []
12.	Were any anoma	lies identified in sample rec	ceipt?	Yes[] No[/]
13.	Description of an	omalies (include sample nu	ımbers):	
Sample	Custodián:	4/	Date: 04 27 a	· C
Clie	ent Sample ID	Analysis Requested	Condition	Comments/Action
Client In	formed on	by	Person contacted	
[ ] No :	action necessary; pro	cess as is.		
Project M	lanager		Date	
LS-023,	9/03, Rev. 5			

#### Sample Preparation/Analysis 5/10/2005 8:29:06 AM Balance Id:1120482733 384868, Pacific Northwest National Labortories, FP Tc-99 Prp/SepRC5065 Pipet #: Pacific Northwest National Lab S5 Technetium-99 by Liquid Scint 51 CLIENT: HANFORD Sep1 DT/Tm Tech: Report Due: 05/12/2005 Batch: 5118294 pCi/L WATER PM, Quote: BG2, 57671 Sep2 DT/Tm Tech: SEQ Batch, Test: None Prep Tech: ,ALMQUISTK Work Order, Lot, Total Amt Total Initial Aliquot Adj Aliq Amt QC Tracer Count Detector Count On | Off CR Analyst, Comments: Amt/Unit Sample Date Acidified/Unit (Un-Acidified) Prep Date /Unit Time Min ld (24hr) Circle Init/Date 1 G9A7L-1-AA 128.60q,in 128.60g J5D270327-1-SAMP 04/27/2005 11:20 AmtRec: 20ML.2X500P #Containers: 3 Alpha: 1.65E+03 pCi/L Beta: 5.94E+02 pCi/L 2 G9A7N-1-AA 127.80g,in 127.80g J5D270327-2-SAMP 04/27/2005 09:54 AmtRec: 20ML,2X500P Beta: 1.43E+02 pCi/L #Containers: 3 Scr Rst: Alpha: 3.12E+02 pCi/L 3 G9A9E-1-AA 127.40g,in 127.40g J5D270340-1-SAMP 04/27/2005 09:57 AmtRec: 20ML.2X500P #Containers: 3 Scr Rst: Alpha: 6.69E+02 pCi/L Beta: 3.26E+02 pCi/L TCSG1098 4 G9A9E-1-AD-S 126.80g,in 126.80g 03/24/05,pd J5D270340-1-MS 02/15/05.r 04/27/2005 09:57 AmtRec: 20ML,2X500P Scr Rst: Alpha: 6.69E+02 pCi/L Beta: 3.26E+02 pCi/L #Containers: 3 5 G9A9E-1-AE-X 129.40q,in 129.40q J5D270340-1-DUP 04/27/2005 09:57 AmtRec: 20ML,2X500P #Containers: 3 Alpha: 6.69E+02 pCi/L Beta: 3.26E+02 pCi/L 6 G9A9H-1-AA 126.40a 126,40a.in J5D270340-2-SAMP 04/27/2005 11:37 AmtRec: 20ML,2X500P Beta: 9.00E+01 pCi/L #Containers: 3 Scr Rst: Alpha: 2.41E+02 pCi/L 7 G9A9L-1-AA 126.40g 126.40g,in J5D270340-3-SAMP 04/27/2005 09:01 AmtRec: 20ML,2X500P #Containers: 3 Scr Rst: Alpha: 2.65E+02 pCi/L Beta: 6.54E+01 pCi/L

Page 1

ISV - Insufficient Volume for Analysis

WO Cnt: 7

ICOC v4.8.08

STL Richland

Richland Wa.

Key: In - Initial Amt, fi - Final Amt, di - Diluted Amt, s1 - Sep1, s2 - Sep2

pd - Prep Dt, r - Reference Dt, ec-Enrichment Cell, ct-Cocktailed Added

5/10/2005 8:29:0	)7 AM			Sample Prep	paration/Ana	alysis	***	Balance	ld:1120482733	
384868, Pacific Nacific Northwest		al Labortories ,		99 Prp/SepRC5065	id Calmt				et #:	
Report Due: 05				hnetium-99 by Liqu ENT: HANFORD	id Scint			Sep1 DT/Tm Te		ప
Batch: 5118294		pCi/L			uote: BG2, 57	671		-		
SEQ Batch, Test: N		POILE		rivi, G	uote. BG2, 57	071		Sep2 DT/Tm Te		va.
								Prep Te	ech: ,ALMQUIS	ΓK
Work Order, Lot, Sample Date	Total Amt /Unit	Total Acidified/Unit	Initial Aliquo Amt/Unit	t Adj Aliq Amt (Un-Acidified)	QC Tracer Prep Date	Count Time Min	Detector Id	Count On Off (24hr) Circle	CR Analyst, Init/Date	Comments:
8 G9A9R-1-AA			126.00g,in	126.00g	<u> </u>			Щ	Ш	
J5D270340-4-SAMF										
04/27/2005 09:34		Amti	 Rec: 20ML,2X500P	#Containers: 3			Sc	er Rst: Alpha: 7.65E		eta: 2.90E+03 pCi/L
9 G9A9W-1-AA			127.30g,in	127.30g				Tipha. 7.00L	-,00 post - D	ош. 2.002-100 ролд
J5D270340-5-SAMF	•		<b>3</b> ,	<b>-</b>						
			D 00111 01/500D		**************************************					
04/27/2005 09:59 10G9A90-1-AA		Amti	Rec: 20ML,2X500P				Sc	r Rst: Alpha: 2.11E	:+03 pCi/L B	eta: 8.99E+02 pCi/L
J5D270340-6-SAMF	<b>)</b>		129.00g,in	129.00g						
		***************************************				************	***************************************			
04/27/2005 10:19		Amti	Rec: 20ML,2X500P	#Containers: 3			Sc	r Rst: Alpha: 9.93E	E+02 pCi/L B	eta: 3.53E+02 pCi/L
11 G9A92-1-AA			125.40g,in	125.40g						
J5D270340-7-SAMF		~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~				~~~~~~~~~~~~~~~				
04/27/2005 10:45		Amti	Rec: 20ML,2X500P	#Containers: 3			Sc	er Rst: Alpha: 4.12E	:02 nCi/l B	eta: 2.05E+02 pCi/L
12G9A95-1-AA		7 1110	129.10g,in	129.10g		·····		7.13t. Aprila. 4.12L	-TOZ PO//L D	eta. 2.03E+02 pO#E
J5D270340-8-SAMF	•		··· <b>·</b>							
							***************************************			
04/27/2005 12:11		Amti	Rec: 20ML,2X500P	#Containers: 3			Sc	r Rst: Alpha: 6.35E	+02 pCi/L B	eta: 3.32E+02 pCi/L
13G9A99-1-AA			128.40g,in	128.40g						
J5D270340-9-SAMF 		**************************************				***************		***************************************		
04/27/2005 10:19		Amti	Rec: 20ML,2X500P	#Containers: 3			Sc	r Rst: Alpha: 7.78E	E+02 pCi/L B	eta: 3.78E+02 pCi/L
14G9DQ6-1-AA-B			125.00g,in	125.00g						
J5D280000-294-BLI			•	~						
						**				
04/27/2005 09:57		Amti	Rec:	#Containers: 1		<b></b>	Sc	r Rst: Alph	a:	Beta:
STL Richland	Key: In - Initial Am	nt, fi - Final Amt, d	li - Diluted Amt,	s1 - Sep1, s2 - Sep2	Page 2	ISV - In	sufficient Volun	ne for Analysis		WO Cnt: 14
Richland Wa.	pd - Prep Dt,	r - Reference Dt, ed	:-Enrichment Ce	ell, ct-Cocktailed Added				,		ICOC v4.8.

5/10/2005 8:29:0	08 AM				Sample Prepa	ration/Ana		Balance Id:1120482733				
					rp/SepRC5065	Calua				Pipet #:		
Report Due: 05/	12/2005				tium-99 by Liquid : HANFORD	Scint			Sep1 DT/Ti	n Tech:		3
Batch: 5118294		pC	:i/L.	- 1111000000					Sep2 DT/Ti			
SEQ Batch, Test: N		ρ-	-						-		MOLUOTIC	5
										p Tech: ,AL	.MQUISTK	
Work Order, Lot, Sample Date	Total Amt /Unit	Total Acidified/	111	itial Aliquot Amt/Unit	Adj Aliq Amt (Un-Acidified)	QC Tracer Prep Date	Count Time Min	Detector Id	Count On   C (24hr) Circle		Analyst, nit/Date	Comments:
5 G9DQ6-1-AC-C			12	5.00g,in	125.00g	TCSE1693	<u> </u>			1		
J5D280000-294-LC						03/22/05,pd 03/10/05.r						
04/27/2005 09:57			AmtRec:	#C.	ontainers: 1			۰	r Rst:	Alpha		Data
6G9DQ6-1-AD-BN			Aminec.	#0	ontainers. I			30	i nat.	Alpha:		Beta:
J5D280000-294-IBL	K											
HARDEN AND AND AND AND AND AND AND AND AND AN		******			~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~							**
04/27/2005 09:57			AmtRec:	#C	ontainers: 1			Sc	r Rst:	Alpha:		Beta:
7G9DQ6-1-AE-BN												
J5D280000-294-IBL		**=====			* * * * * * * * * * * * * * * * * * *				**************			*******
04/27/2005 09:57			AmtRec:	#C	ontainers: 1			Sc	r Rst:	Alpha:		Beta:
Commonto	Street Street						<u> </u>			* *** *** ****************************		
Comments:												
11 011	<b>N-1-1</b>					- · · · · · · · · · · · · · · · · · · ·						
11 Clients for 384868, Pac	ific Northwes	t National	Labortori	es Paci	fic Northwest Na	ational Lab,	BG2, 57671					
9A7L1AA-SAMP Co	onstituent Li	st:			· · · · · · · · · · · · · · · · · · ·							
Tc-99 RI 9A9E1AD-MS:	DL:15	pCi/L	LCL:70	UCL:130	RPD:20							
9DQ61AA-BLK: Tc-99 RI	DL:15	pCi/L	LCL:	UCL:	RPD:							
9DQ61AC-LCS: Tc-99 RI	DL:15	pCi/L	LCL:70	UCL:130	RPD:20							
9DQ61AD-IBLK:												
TC-99 RI 9DQ61AE-IBLK:	DL:15	pCi/L	LCL:	UCL:	RPD:							
TC-99 RI	DL:15	pCi/L	LCL:	UCL:	RPD:							
9A7L1AA-SAMP Ca Uncert Leve	alc Info: el (#s).: 2	Decay to	SaDt: Y	Blk Sub	t.: N Sci.No	ot.: Y OD	Rs: B					
STL Richland					Sep1, s2 - Sep2	Page 3	19\/ - In	sufficient Volun	ne for Analysis		\^/	O Cnt: 17
Richland Wa.	=				t-Cocktailed Added	. 2900	10 - 111	.camoioni voidii	101 / 111019313		**	ICOC v4.8

5/13/2005 10:21:31 AM

# ICOC Fraction Transfer/Status Report ByDate: 5/13/2004, 5/18/2005, Batch: '5118294', User: \*ALL Order By DateTimeAccepting

Q Batch Wo	ork Ord CurStatu	s Ac	cepting		Comments
5118294	Nonecontrol				ONIDE COLDONARIO EN CARCARO SE SE ESTABLICA EN
AC	CalcC	ALMQUISTK	5/10/2005 7:00:	21	
SC		heidelbergt	IsBatched	4/28/2005 10:59:59 AM	ICOC_RADCALC v4.8.08
SC		ALMQUISTK	InPrep	5/10/2005 7:00:21 AM	RICH-RC-5017 Revision 4
SC		ALMQUISTK	Prep1C	5/10/2005 1:26:30 PM	RICH-RC-5065 REVISION 5
SC	9,	BlackCL	InCnt1	5/10/2005 1:31:27 PM	RICH-RD-0001 REVISION 3
SC		BlackCL	CalcC	5/12/2005 7:41:53 AM	RICH-RD-0001 REVISION 3
AC		ALMQUISTK	5/10/2005 1:26:	30 PM	
AC		BlackCL	5/10/2005 1:31:	27 PM	
AC		BlackCL	5/12/2005 7:41:	53	

AC: Accepting Entry; SC: Status Change

STL Richland Richland Wa.

Grp Rec Cnt:4 ICOCFractions v4.8.09

#### 4/28/2005 11:00:18 AM Sample Preparation/Analysis Balance Id: 384868, Pacific Northwest National Labortories, **DH UNat Laser PrpRC5015** Pipet #: Pacific Northwest National Lab SS Total Uranium by KPA **5I CLIENT: HANFORD** Sep1 DT/Tm Tech: Report Due: 05/12/2005 Batch: 5118295 WATER ug/L PM, Quote: BG2, 57671 Sep2 DT/Tm Tech: SEQ Batch, Test: None Prep Tech: Work Order, Lot, Total Initial Aliquot QC Tracer Count Count On | Off Detector CR Analyst, Comments: Sample DateTime Amt/Unit Amt/Unit Prep Date Time Min ld (24hr) Circle Init/Date 1 G9A7L-1-AC J5D270327-1-SAMP 04/27/2005 11:20 AmtRec: 20ML.2X500P #Containers: 3 Scr Rst: Alpha: Beta: 2 G9A7L-1-AD-S INSF 2362 J5D270327-1-MS 04/27/2005 11:20 AmtRec: 20ML.2X500P #Containers: 3 Scr Rst: Alpha: Beta: 3 G9A7L-1-AE-X J5D270327-1-DUP AmtRec: 20ML.2X500P #Containers: 3 Scr Rst: Beta: Alpha: 4 G9A7N-1-AC J5D270327-2-SAMP 04/27/2005 09:54 Alpha: AmtRec: 20ML,2X500P #Containers: 3 Scr Rst: Beta: 5 G9A9E-1-AC J5D270340-1-SAMP 04/27/2005 09:57 AmtRec: 20ML,2X500P #Containers: 3 Scr Rst: Alpha: Beta: 6 G9A9H-1-AC J5D270340-2-SAMP 04/27/2005 11:37 AmtRec: 20ML.2X500P #Containers: 3 Scr Rst: Alpha: Beta: 7 G9A9L-1-AC J5D270340-3-SAMP 04/27/2005 09:01 AmtRec: 20ML,2X500P Scr Rst: #Containers: 3 Alpha: Beta:

Page 1

ISV - Insufficient Volume for Analysis

WO Cnt: 7

ICOC v4.8.08

STL Richland

Richland Wa.

Key: In - Initial Amt, fi - Final Amt, di - Diluted Amt, s1 - Sep1, s2 - Sep2

pd - Prep Dt, r - Reference Dt, ec-Enrichment Cell, ct-Cocktailed Added

#### 4/28/2005 11:00:19 AM Sample Preparation/Analysis Balance Id: 384868, Pacific Northwest National Labortories, DH UNat Laser PrpRC5015 Pipet #: Pacific Northwest National Lab SS Total Uranium by KPA **5I CLIENT: HANFORD** Sep1 DT/Tm Tech: Report Due: 05/12/2005 Batch: 5118295 WATER PM, Quote: BG2, 57671 ug/L Sep2 DT/Tm Tech: SEQ Batch, Test: None Prep Tech: Work Order, Lot. Total Initial Aliquot QC Tracer Count Count On | Off CR Analyst, Detector Comments: Sample DateTime Amt/Unit Amt/Unit Prep Date Time Min ld (24hr) Circle Init/Date 8 G9A9R-1-AC J5D270340-4-SAMP AmtRec: 20ML.2X500P #Containers: 3 Scr Rst: Alpha: Beta: 9 G9A9W-1-AC J5D270340-5-SAMP 04/27/2005 09:59 AmtRec: 20ML,2X500P Scr Rst: #Containers: 3 Alpha: Beta: 10G9A90-1-AC J5D270340-6-SAMP 04/27/2005 10:19 AmtRec: 20ML.2X500P #Containers: 3 Scr Rst: Alpha: Beta: 11 G9A92-1-AC J5D270340-7-SAMP 04/27/2005 10:45 AmtRec: 20ML,2X500P #Containers: 3 Scr Rst: Alpha: Beta: 12G9A95-1-AC J5D270340-8-SAMP 04/27/2005 12:11 AmtRec: 20ML,2X500P #Containers: 3 Scr Rst: Alpha: Beta: 13G9A99-1-AC J5D270340-9-SAMP 04/27/2005 10:19 AmtRec: 20ML,2X500P #Containers: 3 Scr Rst: Alpha: Beta: 14G9DRG-1-AA-B J5D280000-295-BLK 04/27/2005 11:20 AmtRec: #Containers: 1 Scr Rst: Alpha: Beta: STL Richland Key: In - Initial Amt, fi - Final Amt, di - Diluted Amt, s1 - Sep1, s2 - Sep2 WO Cnt: 14 Page 2 ISV - Insufficient Volume for Analysis

ICOC v4.8.08

pd - Prep Dt, r - Reference Dt, ec-Enrichment Cell, ct-Cocktailed Added

Richland Wa.

4/28/2005 11:00:19 AM			Sample P	reparation/	Analysis		Balance Id:	
		SS To	Nat_Laser PrpRC otal Uranium by K	5015 (PA	•		Pipet #:	
Report Due: 05/12/2005		51 CI	LIENT: HANFORD	)		Sep1	DT/Tm Tech:	
<b>3atch: 5118295</b> SEQ Batch, Test: None	ug/	/L				Sep2	DT/Tm Tech:	
						1000 1000 1000 1000 1000 1000 1000 100	Prep Tech:	
	Total mt/Unit	Initial Aliquot Amt/Unit	QC Tracer Prep Date	Count Time Min	Detector Id	Count On   Off (24hr) Circle	CR Analyst, Init/Date	Comments
5 G9DRG-1-AC-C			_	181				A
J5D280000-295-LCS 	<b> </b>	UNSF 230	<u>43</u>					
######################################	i	AmtRec:	#Containers: 1			Scr Rst:	Alpha:	Beta:
6G9DRG-1-AD-C		1						
J5D280000-295-LCS 	<b>]</b>							
04/27/2005 11:20	<u> </u>	AmtRec:	#Containers: 1			Scr Rst:	Alpha:	Beta:
Comments								
Comments:								
ll Clients for Batch: 384868, Pacific North 9A7L1AC-SAMP Constituent Uranium RDL:1.44E-0: 9A7L1AD-MS Constituent L:	List: 1 ug/L	Labortories LCL: UC	Pacific Northwe L: RPD:	est National I	ab, BG2, 5767	1		
ll Clients for Batch: 384868, Pacific North 9A7L1AC-SAMP Constituent Uranium RDL:1.44E-0	List: 1 ug/L ist:		L: RPD:	est National I	ab, BG2, 5767	1		
11 Clients for Batch: 384868, Pacific Norths 9A7L1AC-SAMP Constituent Uranium RDL:1.44E-0: 9A7L1AD-MS Constituent L: 9DRG1AA-BLK: Uranium RDL:1.44E-0: 9DRG1AC-LCS: Uranium RDL:0.14434: 9DRG1AD-LCS:	List: 1 ug/L ist: 1 ug/L 3 ug/L	LCL: UC:	L: RPD: L: RPD:	0	ab, BG2, 5767	1		
11 Clients for Batch: 384868, Pacific North  9A7L1AC-SAMP Constituent Uranium RDL:1.44E-0: 9A7L1AD-MS Constituent L: 9DRG1AA-BLK: Uranium RDL:1.44E-0: 9DRG1AC-LCS: Uranium RDL:0.14434: 9DRG1AD-LCS: Uranium RDL:0.14434:	List: 1 ug/L ist: 1 ug/L 3 ug/L	LCL: UC:	L: RPD:	0	ab, BG2, 5767.	1		
11 Clients for Batch: 384868, Pacific Norths 9A7L1AC-SAMP Constituent Uranium RDL:1.44E-0: 9A7L1AD-MS Constituent L: 9DRG1AA-BLK: Uranium RDL:1.44E-0: 9DRG1AC-LCS: Uranium RDL:0.14434: 9DRG1AD-LCS:	List: 1 ug/L ist: 1 ug/L 3 ug/L 3 ug/L	LCL: UCL LCL:70 UCL LCL:70 UCL	L: RPD: L: RPD: L:130 RPD:20	0	.ab, BG2, 5767	1		
11 Clients for Batch:     384868, Pacific North  9A7L1AC-SAMP Constituent Uranium RDL:1.44E-0: 9A7L1AD-MS Constituent L:  9DRG1AA-BLK: Uranium RDL:1.44E-0: 9DRG1AC-LCS: Uranium RDL:0.14434: 9DRG1AD-LCS: Uranium RDL:0.14434: 9A7L1AC-SAMP Calc Info:     Uncert Level (#s):: 2 9A7L1AD-MS Calc Info:     Uncert Level (#s):: 2	List: 1 ug/L ist: 1 ug/L 3 ug/L 3 ug/L C Decay to Decay to	LCL: UC:  LCL: UC:  LCL:70 UC:  LCL:70 UC:  SaDt: Y Bli  SaDt: Y Bli	L: RPD: L: RPD: L:130 RPD:20 L:130 RPD:20 k Subt.: N S	o O		1		
11 Clients for Batch:     384868, Pacific North  9A7L1AC-SAMP Constituent Uranium RDL:1.44E-0: 9A7L1AD-MS Constituent L:  9DRG1AA-BLK: Uranium RDL:1.44E-0: 9DRG1AC-LCS: Uranium RDL:0.14434: 9DRG1AD-LCS: Uranium RDL:0.14434: 94A7L1AC-SAMP Calc Info:     Uncert Level (#s).: 2 9A7L1AD-MS Calc Info:     Uncert Level (#s).: 2 9DRG1AA-BLK:     Uncert Level (#s).: 2	List: 1 ug/L ist: 1 ug/L 3 ug/L 3 ug/L C Decay to C Decay to Decay to	LCL: UC: LCL:70 UC: LCL:70 UC: Sapt: Y B11 Sapt: Y B11 Sapt: Y B11	L: RPD:  L: RPD:  L:130 RPD:20  L:130 RPD:20  k Subt.: N S  k Subt.: N S	O Sci.Not.: Y Sci.Not.: Y	ODRs: B ODRs: B	1		
11 Clients for Batch:     384868, Pacific North  9A7L1AC-SAMP Constituent Uranium RDL:1.44E-0: 9A7L1AD-MS Constituent L:  9DRG1AA-BLK: Uranium RDL:1.44E-0: 9DRG1AC-LCS: Uranium RDL:0.14434: 9DRG1AD-LCS: Uranium RDL:0.14434: 9A7L1AC-SAMP Calc Info:     Uncert Level (#s).: 2 9A7L1AD-MS Calc Info:     Uncert Level (#s).: 2 9DRG1AA-BLK:     Uncert Level (#s).: 2	List: 1 ug/L ist: 1 ug/L 3 ug/L 3 ug/L C Decay to C Decay to Decay to Decay to Decay to	LCL: UC:  LCL:70 UC:  LCL:70 UC:  SaDt: Y B1:  SaDt: Y B1:  SaDt: Y B1:  SaDt: Y B1:	L: RPD:  L: RPD:  L: 130 RPD:20  L:130 RPD:20  k Subt.: N S  k Subt.: N S	O O Sci.Not.: Y Sci.Not.: Y	ODRs: B	1		

ICOC v4.8.08

pd - Prep Dt, r - Reference Dt, ec-Enrichment Cell, ct-Cocktailed Added

Richland Wa.

4/28/2005 11:00:19 A	AM M		Sample Pr	eparation/	Analysis	WHILE	Bal	Balance Id:		
Report Due: 05/12/2	005	SS Tot	at_Laser PrpRC50 al Uranium by KP ENT: HANFORD	015	PRIOF		Sep1 DT/I	Pipet #:	-	
Batch: 5118295		ug/L					Sep2 DT/I	m Tech:		
SEQ Batch, Test: None			1162					ep Tech:	#	
Work Order, Lot, Sample DateTime	Total Amt/Unit	Initial Aliquot Amt/Unit	QC Tracer Prep Date	Count Time Min	Detector Id	Count On   O (24hr) Circle	off	CR Analyst, Init/Date	Comments:	
				Appı	coved By			Date:		

5/10/2005 10:57:26 AM

# ICOC Fraction Transfer/Status Report ByDate: 5/10/2004, 5/15/2005, Batch: '5118295', User: \*ALL Order By DateTimeAccepting

Q Batch Wo	ork Ord CurState	us Ac	Accepting		Comments
5118295				THE STATE OF THE S	
AC	Cnt1C	ALMQUISTK	5/4/2005 2:00:53 PM		
SC		heidelbergt	IsBatched	4/28/2005 10:59:59 AM	ICOC_RADCALC v4.8.08
SC		ALMQUISTK	Prep1C	5/4/2005 2:00:53 PM	RICH-RC-5015 REVISION 4
SC		IOVINC	InCnt1	5/6/2005 6:18:24 AM	RICH-RC-5058 REVISION 6
SC		IOVINC	Cnt1C	5/9/2005 1:23:43 PM	RICH-RC-5058 REVISION 6
AC	IOVINC		5/6/2005 6:18:24 AM		
AC		IOVINC	5/9/2005 1:23:4	3 PM	

AC: Accepting Entry; SC: Status Change

STL Richland Richland Wa.